GA-K8S760M

AMD Socket 754 Processor Motherboard

User's Manual

Rev. 1001

12ME-K8S760M-1001

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Notice

Please do not remove any labels on motherboard, this may void the warranty of this motherboard.

Due to rapid change in technology, some of the specifications might be out of date before publication of this booklet.

The author assumes no responsibility for any errors or omissions that may appear in this document nor does the author make a commitment to update the information contained herein.

Declaration of Conformity

We, Manufacturer/Importer
(full address)

G.B.T. Technology Träding GMbH
Ausschlager Weg 41, 1F, 20537 Hamburg, Germany

declare that the product
(description of the apparatus, system, installation to which it refers)

Mother Board
GA-K8S760M

is in conformity with
(reference to the specification under which conformity is declared)
in accordance with 89/336 EEC-EMC Directive

☐ **EN 55011**	Limits and methods of measurement of radio disturbance characteristics of industrial,scientific and medical (ISM high frequency equipment	☐ **EN 61000-3-2*** ☒ **EN 60555-2**	Disturbances in supply systems cause by household appliances and similar electrical equipment "Harmonics"
☐ **EN 55013**	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	☐ **EN 61000-3-3*** ☒ **EN 60555-3**	Disturbances in supply systems cause by household appliances and similar electrical equipment "Voltage fluctuations"
☐ **EN 55014**	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus	☒ **EN 50081-1**	Generic emission standard Part 1: Residual commercial and light industry
		☒ **EN 50082-1**	Generic immunity standard Part 1: Residual commercial and light industry
☐ **EN 55015**	Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries	☐ **EN 55081-2**	Generic emission standard Part 2: Industrial environment
☐ **EN 55020**	Immunity from radio interference of broadcast receivers and associated equipment	☐ **EN 55082-2**	Generic emission standard Part 2: Industrial environment
☒ **EN 55022**	Limits and methods of measurement of radio disturbance characteristics of information technology equipment	☐ **ENV 55104**	Immunity requirements for household appliances tools and similar apparatus
☐ **DIN VDE 0855** ☐ **part 10** ☐ **part 12**	Cabled distribution systems; Equipment for receiving and/or **distribution** from sound and television signals	☐ **EN50091-2**	EMC requirements for uninterruptible power systems (UPS)

☒ **CE marking** CE (EC conformity marking)

The manufacturer also declares the conformity of above mentioned product with the actual required safety standards in accordance with LVD 73/23 EEC

☐ **EN 60065**	Safety requirements for mains operated electronic and related apparatus for household and similar general use	☐ **EN 60950**	Safety for information technology equipment including electrical bussiness equipment
☐ **EN 60335**	Safety of household and similar electrical appliances	☐ **EN 50091-1**	General and Safety requirments for uninterruptible power systems (UPS)

Manufacturer/Importer

(Stamp)

Date : **Feb. 16, 2004**

Signature: *Timmy Huang*
Name: Timmy Huang

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)



Responsible Party Name: G.B.T. INC. (U.S.A.)

Address: 17358 Railroad Street
City of Industry, CA 91748

Phone/Fax No: (818) 854-9338/ (818) 854-9339

hereby declares that the product

Product Name: Motherboard

Model Number: GA-K8S760M

Conforms to the following specifications:

FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109 (a),Class B Digital Device

Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful and (2) this device must accept any inference received, including that may cause undesired operation.

Representative Person's Name: ERIC LU

Signature: *Eric Lu*

Date: Feb. 16, 2004

CAUTION

Read Me First!

When you are installing the AGP card, please make sure the following notice is fully understood and practiced. If your AGP card has "AGP 4X/8X (1.5V) notch" (show below), please make sure your AGP card is AGP 4X/8X.



Caution: AGP 2X card is not supported by SiS 760. You might experience system unable to boot up normally. Please insert an AGP 4X/8X card.

WARNING: *Never run the processor without the heatsink properly and firmly attached. PERMANENT DAMAGE WILL RESULT!*

Mise en garde : *Ne faites jamais tourner le processeur sans que le dissipateur de chaleur soit fix correctement et fermement. UN DOMMAGE PERMANENT EN RÉSULTERA !*

Achtung: *Der Prozessor darf nur in Betrieb genommen werden, wenn der W rmeableiter ordnungsgem ß und fest angebracht ist. DIES HAT EINEN PERMANENTEN SCHADEN ZUR FOLGE!*

Advertencia: *Nunca haga funcionar el procesador sin el disipador de calor instalado correcta y firmemente. ¡SE PRODUCIRÁ UN DAÑO PERMANENTE!*

Aviso: *Nunca execute o processador sem o dissipador de calor estar adequado e firmemente conectado. O RESULTADO SERÁ UM DANO PERMANENTE!*

警告：　将散热板牢固地安装到处理器上之前，不要运行处理器。过热将永远损坏处理器!

警告:　將散熱器牢固地安裝到處理器上之前，不要運行處理器 。過熱將永遠損壞處理器!

경고:　*히트싱크를 제대로 또 단단히 부착시키지 않은 채 프로세서를 구동시키지 마십시오. 영구적 고장이 발생합니다!*

警告:　*永久的な損傷を防ぐため、ヒートシンクを正しくしっかりと取り付けるまでは、プロセッサを動作させないようにしてください。*

Prepare your computer...

Computer motherboards and expansion cards contain very delicate Integrated Circuit (IC) chips. To protect them against damage from static electricity, you should follow some precautions whenever you work on your computer.

1. Unplug your computer when working on the inside.
2. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
3. Hold components by the edges and try not touch the IC chips, leads or connectors, or other components.
4. Place components on a grounded antistatic pad or on the bag that came with the components whenever the components are separated from the system.
5. Ensure that the ATX power supply is switched off before you plug in or remove the ATX power connector on the motherboard.

Installing the motherboard to the chassis...

If the motherboard has mounting holes, but they don't line up with the holes on the base and there are no slots to attach the spacers, do not become alarmed you can still attach the spacers to the mounting holes. Just cut the bottom portion of the spacers (the spacer may be a little hard to cut off, so be careful of your hands). In this way you can still attach the motherboard to the base without worrying about short circuits. Sometimes you may need to use the plastic springs to isolate the screw from the motherboard PCB surface, because the circuit wire may be near by the hole. Be careful, don't let the screw contact any printed circuit write or parts on the PCB that are near the fixing hole, otherwise it may damage the board or cause board malfunctioning.

English

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Chapter 1 Introduction

Features Summary

Form Factor	• 24.4cm x 24.4cm Micro ATX size form factor, 4 layers PCB
CPU	• Socket 754 for AMD Althlon™ 64 processor (K8) 128K L1& 256K / 512K / 1M L2 cache on die • 1600MHz System Bus • Supports core frequencies in excess of 1.6GHz(2800+) and faster
Chipset	• SiS 760 H.T. Bus/AGP/VLINK Controller • SiS 964 Integrated Peripheral Controller (PSIPC)
Memory	• 2 184-pin DDR DIMM sockets • Supports DDR400/333/266/200 DIMM • Supports 128MB/256MB/512MB/1GB unbuffered DRAM • Supports up to 2GB DRAM (Max) • Supports only 2.5V DDR DIMM
I/O Control	• IT8705
Slots	• 1 AGP slot supports 8X/4X mode, AGP3.0 8X interface at 533MHz • 3 PCI slots support 33MHz & PCI 2.2 compliant
On-Board IDE	• 2 IDE controllers provide IDE HDD/CD-ROM (IDE1, IDE2) with PIO, Bus Master(DMA33/ATA66/ATA100/ATA133) operation modes
Serial ATA	• 2 Serial ATA connectors in 150 MB/s operation mode • Built-in SiS 964
On-Board Peripherals	• 1 Floppy port supports 2 FDD with 360K, 720K,1.2M, 1.44M and 2.88M bytes • 1 Parallel port supports Normal/EPP/ECP mode • 1 Serial port (COMA), 1 VGA port, COMB on board • 8 x USB 2.0/1.1 ports • 3 x IEEE1394 prots (by cable) • 1 IrDA connector for IR • 1 Front Audio connector
Hardware Monitor	• CPU/System fan revolution detect • CPU temperature detect • CPU warning temperature • System voltage detect • CPU/System fan fail warning • Thermal shutdown function

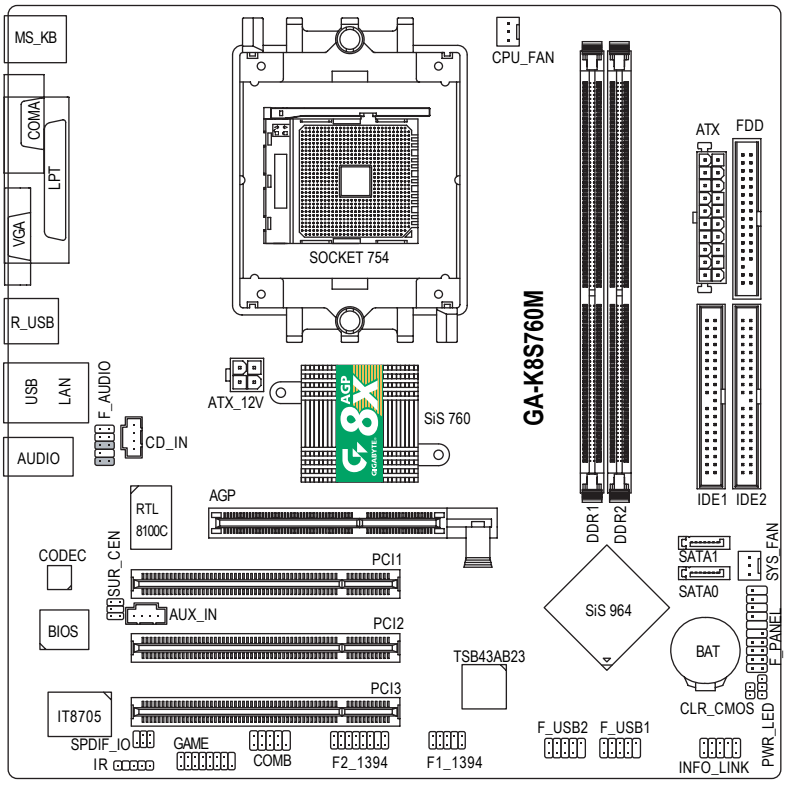
to be continued...

On-Board LAN	• Built-in RTL8100C (10/100 Mbit) • 1 RJ45 port
On-Board Sound	• ALC655 CODEC • Supports Jack Sensing function • Line Out / 2 front speaker • Line In / 2 rear speaker (by s/w switch) • Mic In / center & subwoofer (by s/w switch) • SPDIF In / Out • CD In / AUX In / Game Connector
On-Board SATA RAID	• Onboard SiS 964 • 2 Serial ATA connectors in 150 MB/s operation mode • Supports Disk striping (RAID0) or DISK Mirroring (RAID1) • Up to 2 SATA devices
On-Board IEEE1394	• Built-in TSB43AB23
PS/2 Connector	• PS/2 Keyboard interface and PS/2 Mouse interface
BIOS	• Licensed AWARD BIOS • Supports Q-Flash
Additional Features	• PS/2 Keyboard password power on • PS/2 Mouse power on • STR(Suspend-To-RAM) • AC Recovery • USB KB/Mouse wake up from S3 • Poly fuse for keyboard over-current protection • Supports Thermal Shutdown function • Supports @BIOS • Supports EasyTune 4
Overclocking	• Over Clock (CPU/DDR/AGP/PCI) by BIOS

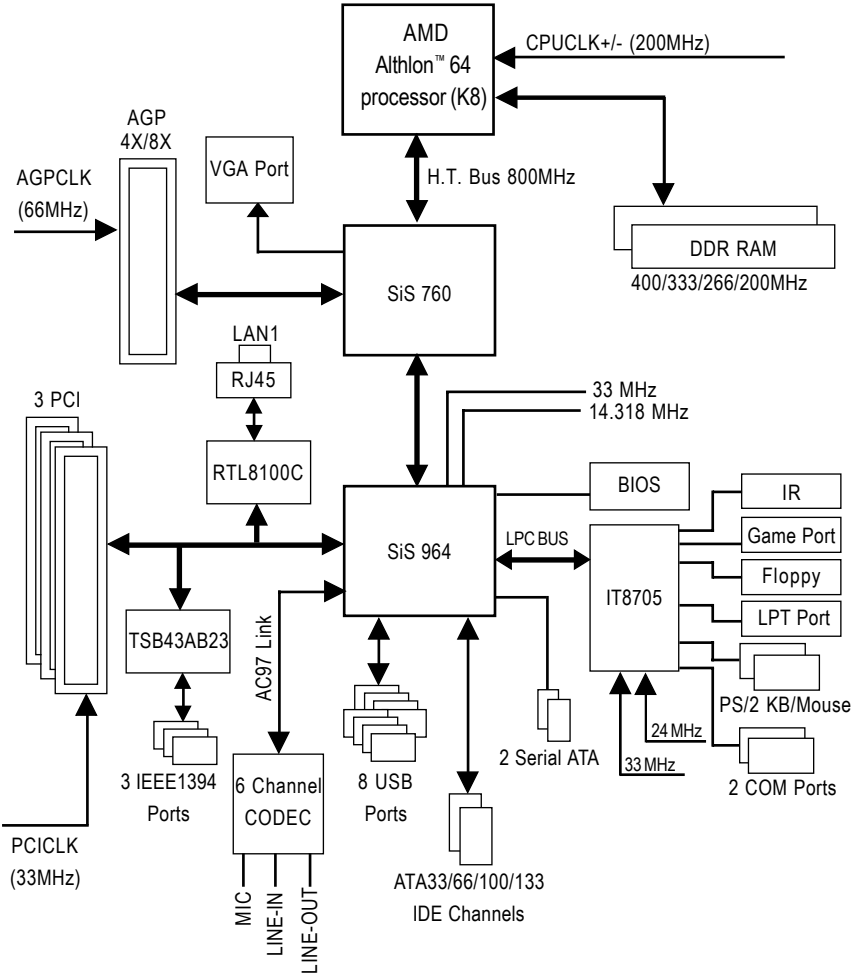


Please set the CPU host frequency in accordance with your processor's specifications.
We don't recommend you to set the system bus frequency over the CPU's specification because these specific bus frequencies are not the standard specifications for CPU, chipset and most of the peripherals. Whether your system can run under these specific bus frequencies properly will depend on your hardware configurations, including CPU, Chipsets, Memory, Cards…etc.

GA-K8S760M Motherboard Layout



Block Diagram



Chapter 2 Hardware Installation Process

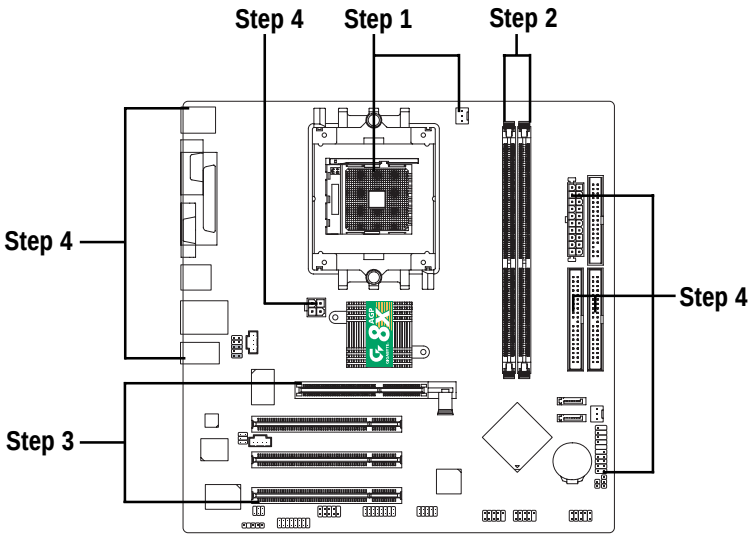
To set up your computer, you must complete the following steps:

Step 1 - Install the Central Processing Unit (CPU)

Step 2 - Install memory modules

Step 3 - Install expansion cards

Step 4 - Install I/O Peripherals Cables



Congratulations! You have accomplished the hardware installation!

Turn on the power supply or connect the power cable to the power outlet. Continue with the BIOS/software installation.

Step 1: Install the Central Processing Unit (CPU)

Before installing the processor and cooling fan, adhere to the following warning:

CAUTION

1. The processor will overheat without the heatsink and/or fan, resulting in permanent irreparable damage.
2. Never force the processor into the socket.
3. Apply thermal grease between the processor and cooling fan.
4. Please make sure the CPU type is supported by the motherboard.
5. If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improper installation. Please change the insert orientation. Please use AMD approved cooling fan.

The installation of the processor and cooling fan is performed in four main steps:

Step 1-1. Processor insertion

Step 1-2. Applying thermal grease

Step 1-3. Cooling fan attachment

Step 1-4. Connecting processor fan power

Step1-1. First, check the processor pins to see that none are bent. Move the socket lever to the unlocked position as shown in Figure 1 & Figure 2.(90° to the plane of the motherboard) prior to inserting the processor. The A1 pin location is designated on the processor by a copper triangle that matches up to a triangle on the socket as shown in Figure 3. Align the processor to the socket and gently lower it into place. Do not force the processor into the socket.



Figure 1. Angling the rod to 65-degree maybe feel a kind of tight , and then continue pull the rod to 90-degree when a noise "cough" made.

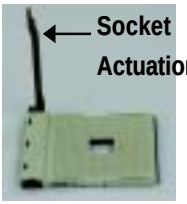


Figure 2. Pull the rod to the 90-degree directly.

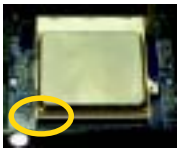


Figure 3. A1 pin location on the Socket and Processor.Move the socket lever to the locked position while holding pressure on the center of the processor.

Step1-2. When the processor is installed in the socket, apply thermal grease to the processor (as shown in Figure 4) prior to installing the heatsink. AMD recommends using a high thermal conductivity grease (such as Shin-Etsu types G751 or G749, or an equivalent product) for the thermal interface material rather than a phase change material. Phase change materials develop strong adhesive forces between the heatsink and processor.

Removing the heatsink under such conditions can cause the processor to be removed from the socket without moving the socket lever to the unlocked position and then damage the processor pins or socket contacts.

** We recommend you to apply the thermal tape to provide better heat conduction between your CPU and heatsink. (The CPU cooling fan might stick to the CPU due to the hardening of the thermal paste. During this condition if you try to remove the cooling fan, you might pull the processor out of the CPU socket alone with the cooling fan, and might damage the processor. To avoid this from happening, we suggest you to either use thermal tape instead of thermal paste, or remove the cooling fan with extreme caution.)

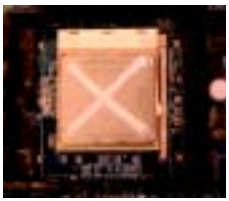
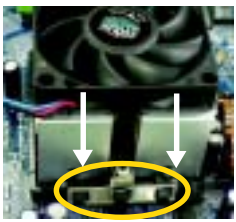


Figure 4. Application of Thermal Grease to the processor.

Step 1-3.Once the thermal grease has been applied to the processor, the heatsink can be attached to the processor. Align the heatsink assembly with the support frame mating with the backer plate standoffs as shown in Figure 5&6.



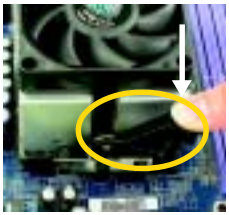


Figure 5&6. Alignment of Heatsink Assembly with Standoffs

Step 1-4. Connect the fan power wires to the header on the motherboard as shown in Figure 7.

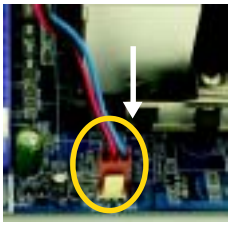


Figure 7. Connecting the Fan Power Wires

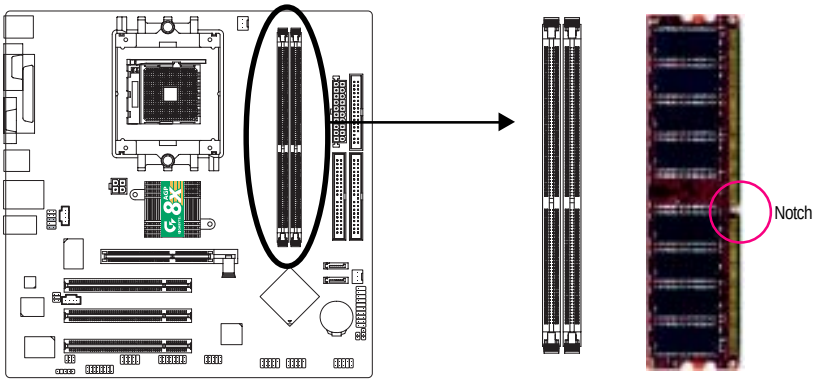
Step 2: Install Memory Modules

CAUTION

Before installing the memory modules, adhere to the following warning:

1. Please note that the DIMM module can only fit in one direction due to the notch. Wrong orientation will cause improper installation. Please change the insert orientation.

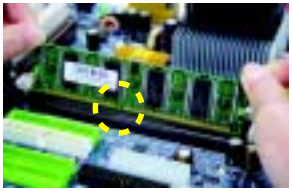
The motherboard has 2 dual inline memory module (DIMM) sockets. The BIOS will automatically detects memory type and size. To install the memory module, just push it vertically into the DIMM socket. The DIMM module can only fit in one direction due to the notch. Memory size can vary between sockets.



DDR

Total Memory Size Per Chip Select

Device Used on DIMMs	Size Per CS	Comments
64 Mbit (2Mx8-bitsx4 banks)	64 Mbyte	
64 Mbit (1Mx16-bitsx4 banks)	32 Mbyte	
128 Mbit(4Mx8-bitsx4 banks)	128 Mbyte	
128 Mbit(2Mx16-bitsx4 banks)	64 Mbyte	
256 Mbit(8Mx8-bitsx4 banks)	256 Mbyte	
256 Mbit(4Mx16x4 banks)	128 Mbyte	
512 Mbit(16Mx8-bitsx4 banks)	512 Mbyte	
512 Mbit(8Mx16-bitsx4 banks)	256 Mbyte	
1 Gbit(32Mx8-bitsx4 banks)	1 Gbyte	
1 Gbit(16Mx16-bitsx4 banks)	512 Mbyte	



1. The DIMM socket has a notch, so the DIMM memory module can only fit in one direction.



2. Insert the DIMM memory module vertically into the DIMM socket. Then push it down.



3. Close the plastic clip at both edges of the DIMM sockets to lock the DIMM module.
 Reverse the installation steps when you wish to remove the DIMM module.

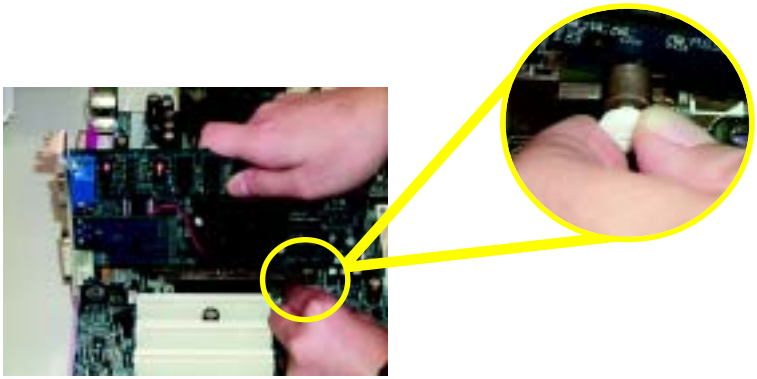
DDR Introduction

Established on the existing SDRAM infrastructure, DDR (Double Data Rate) memory is a high performance and cost-effective solution that allows easy adoption for memory vendors, OEMs, and system integrators.

DDR memory is a great evolutionary solution for the PC industry that builds on the existing SDRAM architecture, yet make the awesome advances in solving the system performance bottleneck by doubling the memory bandwidth. Nowadays, with the highest bandwidth of 3.2GB/s of DDR400 memory and complete line of DDR400/333/266/200 memory solutions, DDR memory is the best choice for building high performance and low latency DRAM subsystem that are suitable for servers, workstations, and full range of desktop PCs.

Step 3: Install Expansion Cards

1. Read the related expansion card's instruction document before install the expansion card into the computer.
2. Remove your computer's chassis cover, screws and slot bracket from the computer.
3. Press the expansion card firmly into expansion slot in motherboard.
4. Be sure the metal contacts on the card are indeed seated in the slot.
5. Replace the screw to secure the slot bracket of the expansion card.
6. Replace your computer's chassis cover.
7. Power on the computer, if necessary, setup BIOS utility of expansion card from BIOS.
8. Install related driver from the operating system.

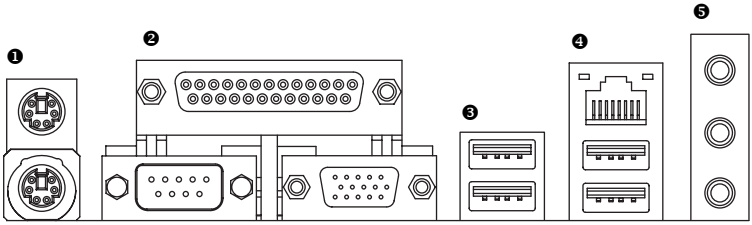


AGP Card

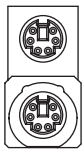
Please carefully pull out the small white-drawable bar at the end of the AGP slot when you try to install / uninstall the AGP card. Please align the AGP card to the onboard AGP slot and press firmly down on the slot. Make sure your AGP card is locked by the small white-drawable bar.

Step 4: Install I/O Peripherals Cables

Step 4-1: I/O Back Panel Introduction



❶ PS/2 Keyboard and PS/2 Mouse Connector



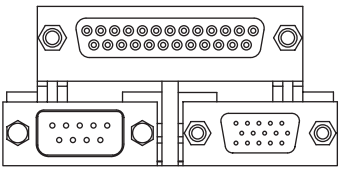
PS/2 Mouse Connector
(6 pin Female)

PS/2 Keyboard Connector
(6 pin Female)

➢ This connector supports standard PS/2 keyboard and PS/2 mouse.

❷ Parallel Port, Serial Port and VGA Port (LPT/COMA/VGA)

Parallel Port (25 pin Female)

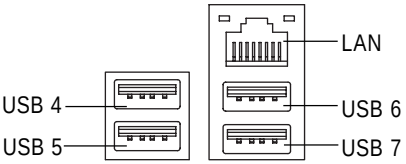


COMA
Serial Port
(9 pin Male)

VGA
VGA Port
(15 pin Female)

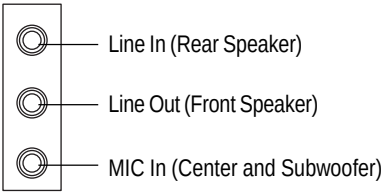
➢ This connector supports 1 standard COM port, 1 Parallel port and 1 VGA port. Device like printer can be connected to Parallel port; mouse and modem etc can be connected to Serial ports.

❸/❹ USB/LAN Connector



- Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard,mouse, scanner, zip, speaker...etc. Have a standard USB interface. Also make sure your OS supports USB controller. If your OS does not support USB controller, please contact OS vendor for possible patch or driver upgrade. For more information please contact your OS or device(s) vendors.
- LAN connector is fast Ethernet with 10/100 Mbps speed.

❺ Audio Connectors



- After install onboard audio driver, you may connect speaker to Line Out jack, microphone to MIC In jack. Device like CD-ROM,walkman etc. can be connected to Line-In jack.

Please note:

You are able to use 2-/4-/6-channel audio feature by S/W selection.

If you want to enable 6-channel function, you have 2 choose for hardware connection.

Method1:

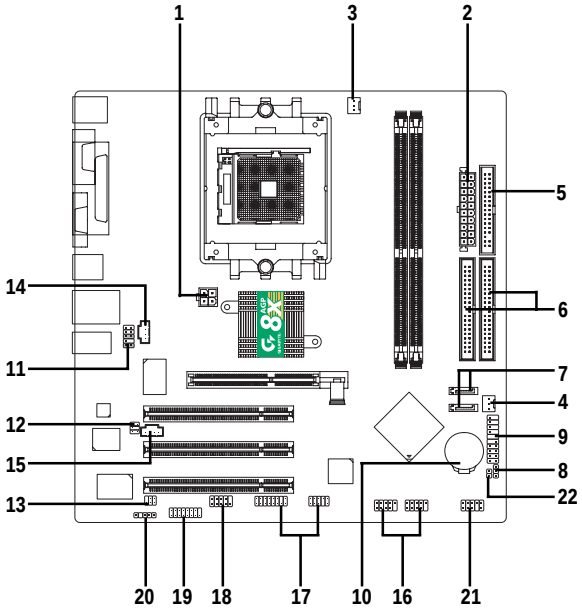
Connect "Front Speaker" to "Line Out"
Connect "Rear Speaker" to "Line In"
Connect "Center and Subwoofer" to "MIC In".

Method2:

You can refer to page 28, and contact your nearest dealer for optional SUR_CEN cable.

If you want the detail information for 2-/4-/6-channel audio setup installation, please refer to page 78.

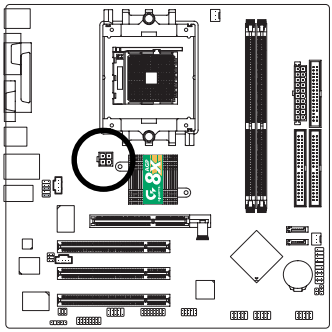
Step 4-2: Connectors Introduction

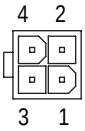


1)	ATX_12V	12)	SUR_CEN
2)	ATX (Power Connector)	13)	SPDIF_IO
3)	CPU_FAN	14)	CD_IN
4)	SYS_FAN	15)	AUX_IN
5)	FDD	16)	F_USB1 / F_USB2
6)	IDE1 / IDE2	17)	F1_1394 / F2_1394
7)	SATA0 / SATA1	18)	COMB
8)	PWR_LED	19)	GAME
9)	F_PANEL	20)	IR
10)	BAT	21)	INFO_LINK
11)	F_AUDIO	22)	CLR_CMOS

1) ATX_12V (+12V Power Connector)

This connector (ATX_12V) supplies the CPU operation voltage (Vcore).
If this "ATX_12V connector" is not connected, system cannot boot.

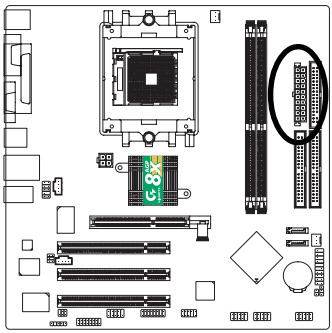


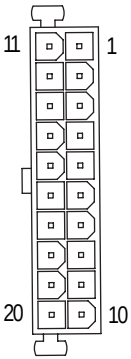


Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V

2) ATX (ATX Power Connector)

AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the motherboard.

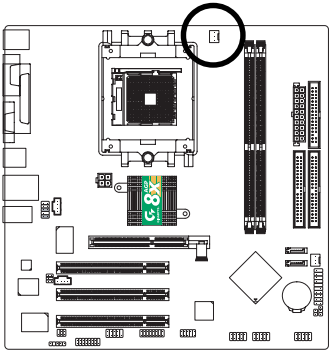




Pin No.	Definition
1	3.3V
2	3.3V
3	GND
4	VCC
5	GND
6	VCC
7	GND
8	Power Good
9	5V SB (stand by +5V)
10	+12V
11	3.3V
12	-12V
13	GND
14	PS_ON(soft on/off)
15	GND
16	GND
17	GND
18	-5V
19	VCC
20	VCC

3) CPU_FAN (CPU Fan Connector)

Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating. The CPU fan connector supports Max. current up to 600 mA.

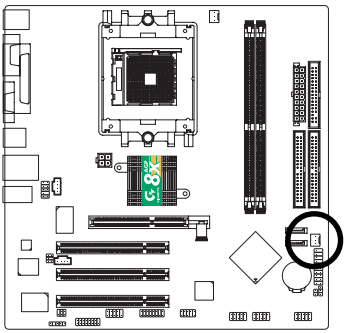




Pin No.	Definition
1	GND
2	+12V
3	Sense

4) SYS_FAN (System Fan Connector)

This connector allows you to link with the cooling fan on the system case to lower the system temperature.



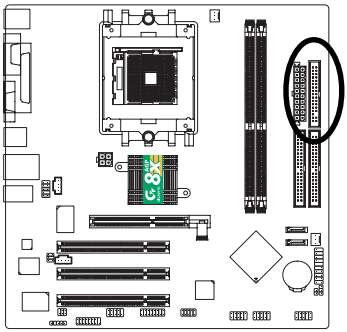


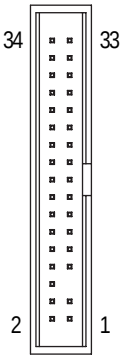
Pin No.	Definition
1	GND
2	+12V
3	Sense

5) FDD (Floppy Connector)

Please connect the floppy drive ribbon cables to FDD. It supports 360K, 1.2M, 720K, 1.44M and 2.88M bytes floppy disk types.

The red stripe of the ribbon cable must be the same side with the Pin1.



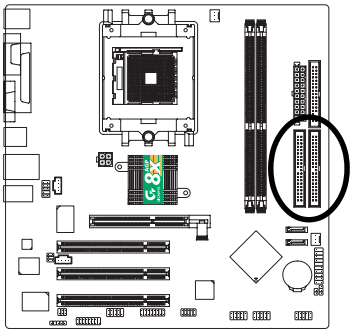


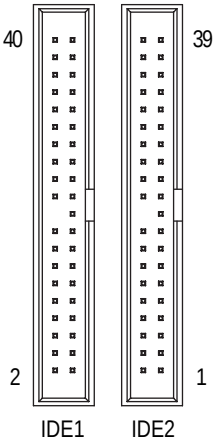
6) IDE1 / IDE2 (IDE1 / IDE2 Connector)

Important Notice:

Please connect first hard disk to IDE1 and connect CD-ROM to IDE2.

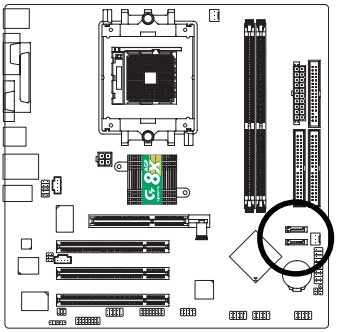
The red stripe of the ribbon cable must be the same side with the Pin1.

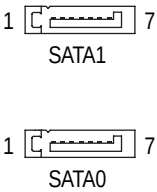




7) SATA0 / SATA1 (Serial ATA Connector)

You can connect the Serial ATA device to this connector, it provides you high speed transfer rates (150MB/sec).

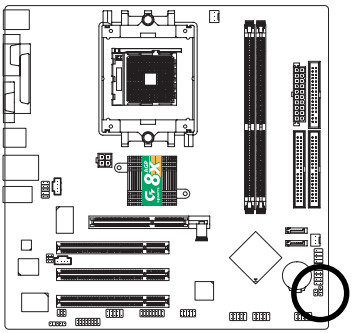




Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

8) PWR_LED

PWR_LED is connect with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode. If you use dual color LED, power LED will turn to another color.

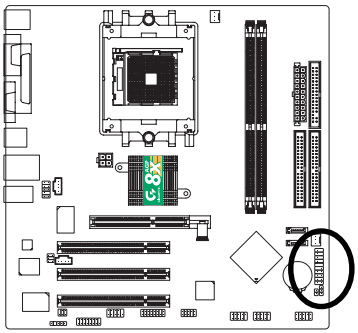


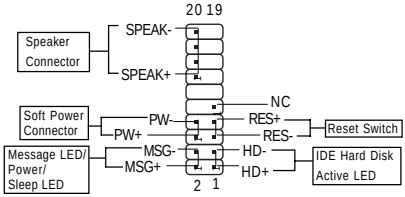


Pin No.	Definition
1	MPD+
2	MPD-
3	MPD-

9) F_PANEL (2 x 10 pins Connector)

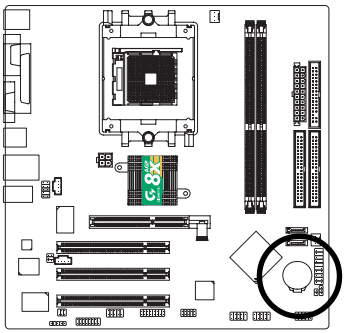
Please connect the power LED, PC speaker, reset switch and power switch etc. of your chassis front panel to the F_PANEL connector according to the pin assignment below.

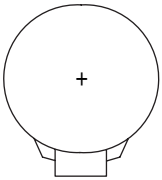




HD (IDE Hard Disk Active LED) (Blue)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
SPEAK (Speaker Connector) (Amber)	Pin 1: VCC(+) Pin 2- Pin 3: NC Pin 4: Data(-)
RES (Reset Switch) (Green)	Open: Normal Operation Close: Reset Hardware System
PW (Soft Power Connector) (Red)	Open: Normal Operation Close: Power On/Off
MSG (Message LED/ Power/ Sleep LED) (Yellow)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
NC (Purple)	N C

10) BAT (Battery)





CAUTION

- Danger of explosion if battery is incorrectly replaced.
- Replace only with the same or equivalent type recommended by the manufacturer.
- Dispose of used batteries according to the manufacturer's instructions.

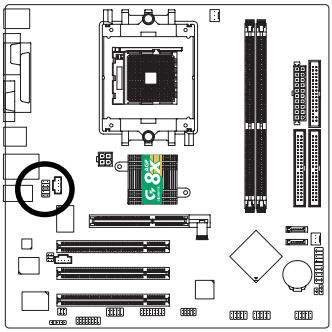
If you want to erase CMOS...

1. Turn OFF the computer and unplug the power cord.
2. Remove the battery, wait for 30 second.
3. Re-install the battery.
4. Plug the power cord and turn ON the computer.

11) F_AUDIO (Front Audio Connector)

If you want to use Front Audio connector, you must remove 5-6, 9-10 Jumper.

In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assigment on the cable is the same as the pin assigment on the MB header. To find out if the chassis you are buying support front audio connector, please contact your dealer. Please note, you can have the alternative of using front audio connector or of using rear audio connector to play sound.

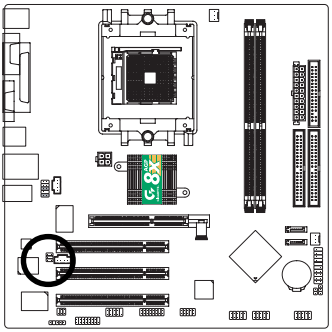




Pin No.	Definition
1	MIC
2	GND
3	REF
4	Power
5	Front Audio (R)
6	Rear Audio (R)
7	Reserved
8	No Pin
9	Front Audio (L)
10	Rear Audio (L)

12) SUR_CEN (Surround Center Connector)

Please contact your nearest dealer for optional SUR_CEN cable.

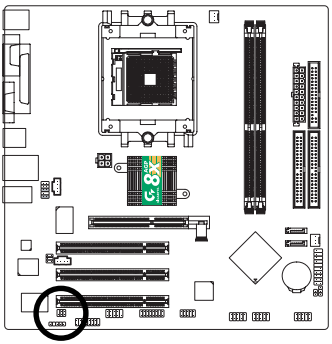




Pin No.	Definition
1	SUR OUTL
2	SUR OUTR
3	GND
4	No Pin
5	CENTER_OUT
6	BASS_OUT

13) SPDIF_IO (SPDIF In / Out Connector)

The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder. Use this feature only when your stereo system has digital input function. Be careful with the polarity of the SPDIF_IO connector. Check the pin assignment carefully while you connect the SPDIF cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional SPDIF cable, please contact your local dealer.

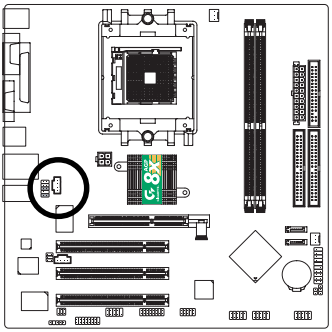




Pin No.	Definition
1	VCC
2	No Pin
3	SPDIF
4	SPDIFI
5	GND
6	GND

14) CD_IN (CD In Connector)

Connect CD-ROM or DVD-ROM audio out to the connector.

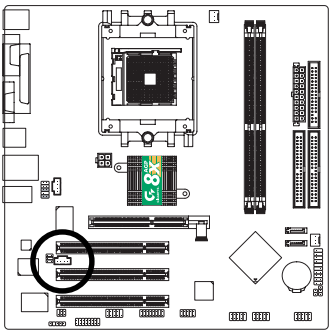


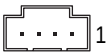


Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD-R

15) AUX_IN (AUX In Connector)

Connect other device (such as PCI TV Tunner audio out) to the connector.

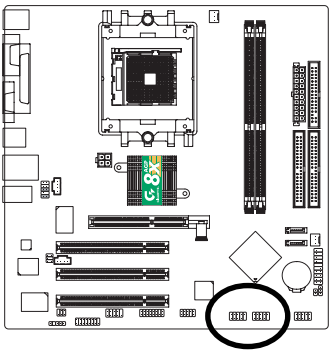


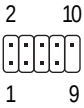


Pin No.	Definition
1	AUX-L
2	GND
3	GND
4	AUX-R

16) F_USB1 / F_USB2 (Front USB Connector)

Be careful with the polarity of the front USB connector. Check the pin assignment carefully while you connect the front USB cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional front USB cable, please contact your local dealer.

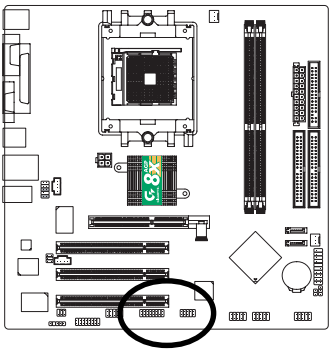




Pin No.	Definition
1	Power
2	Power
3	USB Dx-
4	USB Dy-
5	USB Dx+
6	USB Dy+
7	GND
8	GND
9	No Pin
10	NC

17) F1_1394 / F2_1394 (IEEE1394 Connector)

Serial interface standard set by Institute of Electrical and Electronics Engineers, which has features like high speed, highbandwidth and hot plug. Be careful with the polarity of the IEEE1394 connector. Check the pin assignment carefully while you connect the IEEE1394 cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional IEEE1394 cable, please contact your local dealer.



F2_1394



Pin No.	Definition
1	Power
2	Power
3	TPA0+
4	TPA0-
5	GND
6	GND
7	TPB0+
8	TPB0-
9	Power
10	Power
11	TPA1+
12	TPA1-
13	GND
14	No Pin
15	TPB1+
16	TPB1-

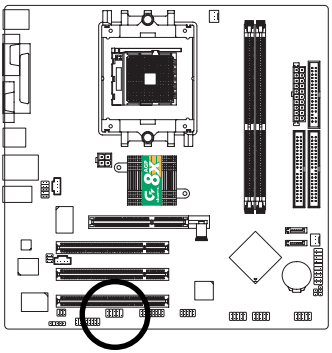
F1_1394



Pin No.	Definition
1	TPA2+
2	TPA2-
3	GND
4	GND
5	TPB2+
6	TPB2-
7	No Pin
8	Power
9	Power
10	GND

18) COMB (COM B Connector)(White)

Be careful with the polarity of the COMB connector. Check the pin assignment while you connect the COMB cable. Please contact your nearest dealer for optional COMB cable.

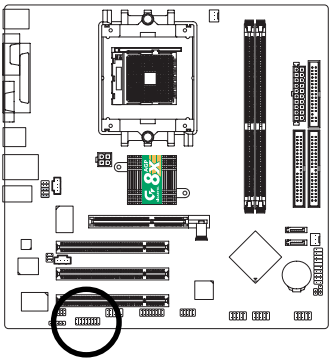


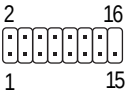


Pin No.	Definition
1	NDCDB-
2	NSINB
3	NSOUTB
4	NDTRB-
5	GND
6	NDSRB-
7	NRTSB-
8	NCTSB-
9	NRIB-
10	No Pin

19) GAME (Game Connector)

This connector supports joystick, MIDI keyboard and other relate audio devices. Check the pin assignment while you connect the game cables. Please contact your nearest dealer for optional game cables.

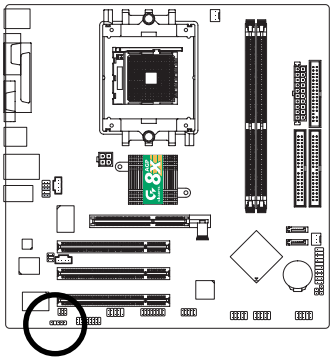




Pin No.	Definition
1	VCC
2	GRX1_R
3	GND
4	GPSA2
5	VCC
6	GPX2_R
7	GPY2_R
8	MSI_R
9	GPSA1
10	GND
11	GPY1_R
12	VCC
13	GPSB1
14	MSO_R
15	GPSB2
16	No Pin

20) IR

Make sure the pin 1 on the IR device is aling with pin one the connector. To enable the IR function on the board, you are required to purchase an option IR module. Be careful with the polarity of the IR/CIR or IR connector. Check the pin assignment carefully while you connect the IR cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional IR cable, please contact your local dealer.

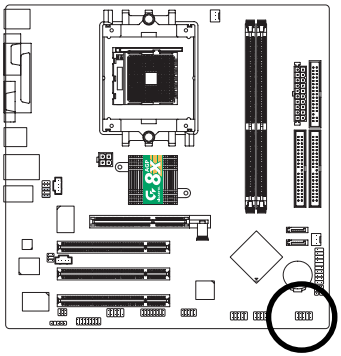


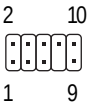


Pin No.	Definition
1	VCC(+5V)
2	No Pin
3	IR Data Input
4	GND
5	IR Data Output

21) INFO_LINK

This connector allows you to connect some external devices to provide you extra function. Check the pin assignment while you connect the external device cable. Please contact your nearest dealer for optional external device cable.

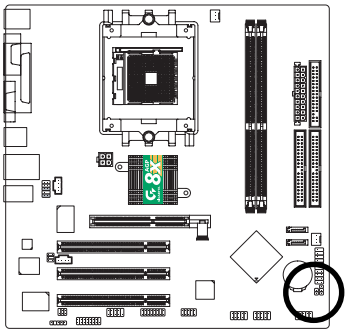




Pin No.	Definition
1	SMBCLK
2	VCC
3	SMBDATA
4	GPIO
5	GND
6	GND
7	No Pin
8	NC
9	+12V
10	+12V

22) CLR_CMOS (Clear CMOS)

You may clear the CMOS data to its default values by this jumper. To clear CMOS, temporarily shor 1-2 pin. Default doesn't include the "Shunter" to prevent from improper use this jumper.





1

Short: Clear CMOS



1

Open: Normal

Chapter 3 BIOS Setup

BIOS Setup is an overview of the BIOS Setup Program. The program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

ENTERING SETUP

Powering ON the computer and pressing <Del> immediately will allow you to enter Setup. If you require more advanced BIOS settings, please go to "Advanced BIOS" setting menu. To enter Advanced BIOS setting menu, press "Ctrl+F1" key on the BIOS screen.

CONTROL KEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Enter>	Select Item
<Esc>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
<+/PgUp>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Item Help
<F3>	Reserved
<F4>	Reserved
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the file-safe default CMOS value from BIOS default table
<F7>	Load the Optimized Defaults
<F8>	Q-Flash utility
<F9>	System Information
<F10>	Save all the CMOS changes, only for Main Menu

GETTING HELP

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

The Main Menu (For example: BIOS Ver. : F1z)

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from eight setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

CMOS Setup Utility-Copyright (C) 1984-2004 Award Software

▶ Standard CMOS Features	Top Performance
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Integrated Peripherals	Load Optimized Defaults
▶ Power Management Setup	Set Supervisor Password
▶ PnP/PCI Configurations	Set User Password
▶ PC Health Status	Save & Exit Setup
▶ Frequency/Voltage Control	Exit Without Saving
ESC: Quit	↑↓→←: Select Item
F8: Q-Flash	F10: Save & Exit Setup
Time, Date, Hard Disk Type...	

Figure 1: Main Menu



If you can't find the setting you want, please press "Ctrl+F1" to search the advanced option hidden.

- **Standard CMOS Features**

 This setup page includes all the items in standard compatible BIOS.

- **Advanced BIOS Features**

 This setup page includes all the items of Award special enhanced features.

- **Integrated Peripherals**

 This setup page includes all onboard peripherals.

- **Power Management Setup**

 This setup page includes all the items of Green function features.

- **PnP/PCI Configurations**

 This setup page includes all the configurations of PCI & PnP ISA resources.

- **PC Health Status**

 This setup page is the System auto detect Temperature, voltage, fan, speed.

- **Frequency/Voltage Control**

 This setup page is control CPU's clock and frequency ratio.

- **Top Performance**

 If you wish to maximize the performance of your system, set "Top Performance" as "Enabled".

- **Load Fail-Safe Defaults**

 Fail-Safe Defaults indicates the value of the system parameters which the system would be in safe configuration.

- **Load Optimized Defaults**

 Optimized Defaults indicates the value of the system parameters which the system would be in best performance configuration.

- **Set Supervisor password**

 Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.

- **Set User password**

 Change, set, or disable password. It allows you to limit access to the system.

- **Save & Exit Setup**

 Save CMOS value settings to CMOS and exit setup.

- **Exit Without Saving**

 Abandon all CMOS value changes and exit setup.

Standard CMOS Features

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Standard CMOS Features

Date (mm:dd:yy)	Wed, Jan 14 2004	Item Help
Time (hh:mm:ss)	22:31:24	Menu Level ▶
		Change the day, month,
▶IDE Channel 0 Master	[None]	year
▶IDE Channel 0 Slave	[None]	
▶IDE Channel 1 Master	[None]	<Week>
▶IDE Channel 1 Slave	[None]	Sun. to Sat.
Drive A	[1.44M, 3.5"]	<Month>
Drive B	[None]	Jan. to Dec.
Floppy 3 Mode Support	[Disabled]	
		<Day>
Halt On	[All Errors]	1 to 31 (or maximum
		allowed in the month)
Base Memory	640K	
Extended Memory	63M	<Year>
Total Memory	64M	1999 to 2098

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 2: Standard CMOS Features

☞ Date

The date format is <week>, <month>, <day>, <year>.

- ⏩ Week — The week, from Sun to Sat, determined by the BIOS and is displayed only.
- ⏩ Month — The month, Jan. Through Dec.
- ⏩ Day — The day, from 1 to 31 (or the maximum allowed in the month)
- ⏩ Year — The year, from 1999 through 2098

☞ Time

The times format in <hour> <minute> <second>. The time is calculated base on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

☞ IDE Primary Master, Slave / IDE Secondary Master, Slave

The category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and manual type. Manual type is user-definable; Auto type which will automatically detect HDD type.

Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

If you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

⏩ Capacity	The hard disk size. The unit is MegaBytes.
⏩ Access Mode	The options are: Auto / Large / LBA / Normal.
⏩ Cylinder	The cylinder number of hard disk.
⏩ Head	The read /write head number of hard disk.
⏩ Precomp	The cylinder number at which the disk driver changes the write current.
⏩ Landing Zone	The cylinder number that the disk driver heads(read/write) are seated when the disk drive is parked.
⏩ Sectors	The sector number of each track define on the hard disk.

If a hard disk has not been installed select NONE and press <Enter>.

☞ Drive A / Drive B

The category identifies the types of floppy disk drive A or drive B that has been installed in the computer.

⏩ None	No floppy drive installed
⏩ 360K, 5.25"	5.25 inch PC-type standard drive; 360K bytes capacity.
⏩ 1.2M, 5.25"	5.25 inch AT-type high-density drive; 1.2M bytes capacity (3.5 inch when 3 Mode is Enabled).
⏩ 720K, 3.5"	3.5 inch double-sided drive; 720K bytes capacity
⏩ 1.44M, 3.5"	3.5 inch double-sided drive; 1.44M bytes capacity.
⏩ 2.88M, 3.5"	3.5 inch double-sided drive; 2.88M bytes capacity.

☞ Floppy 3 Mode Support (for Japan Area)

⏩ Disabled	Normal Floppy Drive. (Default value)
⏩ Drive A	Drive A is 3 mode Floppy Drive.
⏩ Drive B	Drive B is 3 mode Floppy Drive.
⏩ Both	Drive A & B are 3 mode Floppy Drives.

☞ Halt on

The category determines whether the computer will stop if an error is detected during power up.

⏩ No Errors	The system boot will not stop for any error that may be detected and you will be prompted.
⏩ All Errors	Whenever the BIOS detects a non-fatal error the system will be stopped. (Default value)
⏩ All, But Keyboard	The system boot will not stop for a keyboard error; it will stop for all other errors.
⏩ All, But Diskette	The system boot will not stop for a disk error; it will stop for all other errors.
⏩ All, But Disk/Key	The system boot will not stop for a keyboard or disk error; it will stop for all other errors.

☞ Memory

The category is display-only which is determined by POST (Power On Self Test) of the BIOS.

Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard, or 640K for systems with 640K or more memory installed on the motherboard.

Extended Memory

The BIOS determines how much extended memory is present during the POST.

This is the amount of memory located above 1 MB in the CPU's memory address map.

Advanced BIOS Features

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Advanced BIOS Features

▶ Hard Disk Boot Priority	[Press Enter]	Item Help
First Boot Device	[Floppy]	Menu Level ▶
Second Boot Device	[Hard Disk]	Select Hard Disk Boot
Third Boot Device	[CDROM]	Device Priority
Password Check	[Setup]	
Flexible AGP 8X	[Auto]	
Init Display First	[PCI]	

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 3: Advanced BIOS Features

☞ Hard Disk Boot Priority

Use <↑> or <↓> to select a device, then press <+> to move it up, or <-> to move it down the list. Press <ESC> to exit this menu.

⏩ Press Enter Select hard disk boot device priority.

☞ First / Second / Third Boot Device

This feature allows you to select the boot device priority.

⏩ Floppy Select your boot device priority by Floppy.
⏩ LS120 Select your boot device priority by LS120.
⏩ Hard Disk Select your boot device priority by Hard Disk.
⏩ CDROM Select your boot device priority by CDROM.
⏩ ZIP Select your boot device priority by ZIP.
⏩ USB-FDD Select your boot device priority by USB-FDD.
⏩ USB-ZIP Select your boot device priority by USB-ZIP.
⏩ USB-CDROM Select your boot device priority by USB-CDROM.
⏩ USB-HDD Select your boot device priority by USB-HDD.
⏩ LAN Select your boot device priority by LAN.
⏩ Disabled Select your boot device priority by Disabled.

☞ Password Check

- ⏩ System — The system will not boot and will not access to Setup page if the correct password is not entered at the prompt.
- ⏩ Setup — The system will boot but will not access to Setup page if the correct password is not entered at the prompt. (Default value)

☞ Flexible AGP 8X

- ⏩ Auto — Set AGP transfer rate automatically according to AGP compatibility and stability. (Default value)
- ⏩ 8X — Always set AGP transfer rate to 8X if the 8X mode supported by the AGP card.
- ⏩ 4X — Set AGP transfer rate to 4X no matter what the AGP transfer rate the card is.

☞ Init Display First

Select the first initation of the monitor display from onboard AGP or PCI VGA card.

- ⏩ PCI — Set Init Display First to PCI. (Default value)
- ⏩ AGP — Set Init Display First to AGP.

Integrated Peripherals

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Integrated Peripherals

	On-Chip Primary PCI IDE	[Enabled]	Item Help
	On-Chip Secondary PCI IDE	[Enabled]	Menu Level ▶
	IDE DMA transfer access	[Enabled]	
	AC97 Audio	[Enabled]	
	USB Controller	[Enabled]	
	USB Legacy Support	[Disabled]	
	Onboard LAN device	[Enabled]	
	Onboard 1394	[Enabled]	
	SiS Serial ATA Controller	[Enabled]	
	SiS Serial ATA Mode	[RAID]	
	Onboard LAN Boot ROM	[Disabled]	
	Onboard Serial Port 1	[3F8/IRQ4]	
	Onboard Serial Port 2	[2F8/IRQ3]	
	UART Mode Select	[Normal]	
x	UR2 Duplex Mode	Half	
	Onboard Parallel Port	[378/IRQ7]	
	Parallel Port Mode	[SPP]	
x	ECP Mode use DMA	3	
	Game Port Address	[201]	
	Midi Port Address	[Disabled]	
x	Midi Port IRQ	10	

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help

F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 4: Integrated Peripherals

☞ On-Chip Primary PCI IDE

- ⏩ Enabled — Enable onboard 1st channel IDE port. (Default value)
- ⏩ Disabled — Disable onboard 1st channel IDE port.

☞ On-Chip Secondary PCI IDE

- ⏩ Enabled — Enable onboard 2nd channel IDE port. (Default value)
- ⏩ Disabled — Disable onboard 2nd channel IDE port.

☞ IDE DMA transfter access

- ⏩ Enabled — Enable IDE DMA transfer access. (Default value)
- ⏩ Disabled — Disable IDE DMA transfer access.

☞ AC97 Audio

- ⏩ Enabled — Auto-detect onboard AC'97 audio function. (Default value)
- ⏩ Disabled — Disable this function.

☞ USB Controller

Disable this function if you are not using onboard USB feature.

- ⏩ Disabled — Disable USB Controller.
- ⏩ Enabled — Enable USB Controller. (Default value)

☞ USB Legacy Support

When USB keyboard or mouse is installed, please set at Enabled.

- ⏩ Disabled — Disable USB keyboard or mouse support. (Default value)
- ⏩ Enabled — Enable USB keyboard or mouse support.

☞ Onboard LAN device

- ⏩ Enabled — Enable onboard Lan chip function. (Default value)
- ⏩ Disabled — Disable this function.

☞ Onboard 1394

- ⏩ Enabled — Enable onboard IEEE1394 chip function. (Default value)
- ⏩ Disabled — Disable this function.

☞ SiS Serial ATA Controller

- ⏩ Enabled — Enable onboard Serial ATA controller function. (Default value)
- ⏩ Disabled — Disable this function.

☞ SiS Serial ATA Mode

- ⏩ RAID — Select onboard Serial ATA chip function as RAID. (Default value)
- ⏩ IDE — Select onboard Serial ATA chip function as IDE.

☞ Onboard LAN Boot ROM

This function decide whether to invoke the boot ROM of the onboard LAN chip.

- ⏩ Enabled — Enable onboard LAN chip function.
- ⏩ Disabled — Disable this function. (Default value)

☞ Onboard Serial Port 1

- ⏩ Auto — BIOS will automatically setup the port 1 address.
- ⏩ 3F8/IRQ4 — Enable onboard Serial port 1 and address is 3F8. (Default value)
- ⏩ 2F8/IRQ3 — Enable onboard Serial port 1 and address is 2F8.
- ⏩ 3E8/IRQ4 — Enable onboard Serial port 1 and address is 3E8.
- ⏩ 2E8/IRQ3 — Enable onboard Serial port 1 and address is 2E8.
- ⏩ Disabled — Disable onboard Serial port 1.

☞ Onboard Serial Port 2

- ⏩ Auto — BIOS will automatically setup the port 2 address.
- ⏩ 3F8/IRQ4 — Enable onboard Serial port 2 and address is 3F8.
- ⏩ 2F8/IRQ3 — Enable onboard Serial port 2 and address is 2F8. (Default value)
- ⏩ 3E8/IRQ4 — Enable onboard Serial port 2 and address is 3E8.
- ⏩ 2E8/IRQ3 — Enable onboard Serial port 2 and address is 2E8.
- ⏩ Disabled — Disable onboard Serial port 2.

☞ UART Mode Select

This item allows you to determine which Infra Red(IR) function of Onboard I/O chip

- ⏩ Normal — Set onboard I/O chip UART to Normal Mode. (Default value)
- ⏩ IrDA — Set onboard I/O chip UART to IrDA Mode.
- ⏩ ASKIR — Set onboard I/O chip UART to ASKIR Mode.
- ⏩ SCR — Using as Smart Card Interface.

☞ UR2 Duplex Mode

- ⏩ Full — IR Function Duplex Full.
- ⏩ Half — IR Function Duplex Half. (Default value)

☞ Onboard Parallel port

- ⏩ 378/IRQ7 Enable onboard LPT port and address is 378/IRQ7. (Default value)
- ⏩ 278/IRQ5 Enable onboard LPT port and address is 278/IRQ5.
- ⏩ Disabled Disable onboard LPT port.
- ⏩ 3BC/IRQ7 Enable onboard LPT port and address is 3BC/IRQ7.

☞ Parallel Port Mode

This feature allows you to connect with an advanced printer via the port mode it supports.

- ⏩ SPP Using Parallel port as Standard Parallel Port. (Default value)
- ⏩ EPP Using Parallel port as Enhanced Parallel Port.
- ⏩ ECP Using Parallel port as Extended Capabilities Port.
- ⏩ ECP+EPP Using Parallel port as ECP & EPP mode.

☞ ECP Mode Use DMA

This feature allows you to select Direct Memory Access(DMA) channel if the ECP mode selected.

- ⏩ 1 Set ECP Mode Use DMA to 1.
- ⏩ 3 Set ECP Mode Use DMA to 3. (Default value)

☞ Game Port Address

- ⏩ 201 Set Game Port Address to 201. (Default value)
- ⏩ 209 Set Game Port Address to 209.
- ⏩ Disabled Disable this function.

☞ Midi Port Address

- ⏩ 300 Set Midi Port Address to 300.
- ⏩ 330 Set Midi Port Address to 330.
- ⏩ Disabled Disable this function. (Default value)

☞ Midi Port IRQ

- ⏩ 5 Set Midi Port IRQ to 5.
- ⏩ 10 Set Midi Port IRQ to 10. (Default value)

Power Management Setup

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Power Management Setup

	ACPI Suspend Type	[S1(POS)]	Item Help
	Soft-Off by PWR_BTTN	[Off]	Menu Level ▶
	System After AC Back	[Off]	[S1]
	IRQ [3-7, 9-15], NMI	[Enabled]	Set suspend type to
	ModemRingOn	[Enabled]	Power On Suspend under
	PME Event Wake Up	[Enabled]	ACPI OS
x	USB Device Wake-Up From S3	Disabled	
	Power On by Keyboard	[Disabled]	[S3]
	Power On by Mouse	[Disabled]	Set suspend type to
	Resume by Alarm	[Disabled]	Suspend to RAM under
x	Month Alarm	NA	ACPI OS
x	Day (of Month)	0	
x	Time (hh:mm:ss)	0 : 0 : 0	

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 5: Power Management Setup

☞ ACPI Suspend Type

- ⏩ S1(POS) Set suspend type to Power On Suspend under ACPI OS(Power On Suspend). (Default value)
- ⏩ S3(STR) Set suspend type to Suspend To RAM under ACPI OS (Suspend To RAM).

☞ Soft-Off by PWR_BTTN

- ⏩ Off Press power button to power off system instantly. (Default value)
- ⏩ Suspend Press power button 4 sec. to power off system. System will enter suspend if the button is pressed less than 4 sec.

☞ System After AC Back

⏩ Laststate	System power on depends on the status before AC lost.
⏩ Off	Always in Off state when AC back. (Default value)
⏩ On	Always power on the system when AC back.

☞ IRQ [3-7, 9-15], NMI

When IRQ[3-7, 9-15] or NMI triggered, the suspend timer will be reloaded to prevent system gets into green mode.

⏩ Disabled	Disable monitor IRQ[3-7, 9-15] or NMI.
⏩ Enabled	Enable monitor IRQ[3-7, 9-15] or NMI. (Default value)

☞ Modem Ring On

An incoming call via modem can awake the system from any suspend state or an input signal comes from the other client server on the LAN can awake the system from any suspend state.

⏩ Disabled	Disabled Modem Ring On function.
⏩ Enabled	Enabled Modem Ring On function. (Default value)

☞ PME Event Wake Up

Set PME as wake up event.

⏩ Disabled	Disable this function.
⏩ Enabled	Enable PME Event Wake up. (Default value)

☞ USB Device Wake-up From S3

⏩ Disabled	Disable USB devices wakeup from S3. (Default value)
⏩ Enabled	Enable USB devices wakeup from S3.

☞ Power On by Keyboard

⏩ Password	Enter from 1 to 8 characters to set the keyboard power on password.
⏩ Disabled	Disabled this function. (Default value)
⏩ Any key	If your keyboard have "POWER Key" button, you can press the key to power on your system.

☞ Power On by Mouse

- ⏩ Disabled — Disabled this function. (Default value)
- ⏩ Enabled — Move or click the mouse to power on system.

☞ Resume by Alarm

You can set "Resume by Alarm" item to enabled and key in Month/Data/time to power on system.

- ⏩ Disabled — Disable this function. (Default value)
- ⏩ Enabled — Enable alarm function to POWER ON system.

 If RTC Alarm Lead To Power On is Enabled.

Month Alarm:	NA, 1~12
Day (of Month):	Everyday, 1~31
Time (hh: mm: ss):	(0~23) : (0~59) : (0~59)

PnP/PCI Configurations

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PnP/PCI Configurations

PCI 1 IRQ Assignment	[Auto]	Item Help
PCI 2 IRQ Assignment	[Auto]	Menu Level ▶
PCI 3 IRQ Assignment	[Auto]	
		Device(s) using this INT:
		RAID Cntrlr -BUS 0 Dev 5 Func 0
		IEEE 1394 Host Cntrlr -BUS 0 Dev 17 Func 0

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 6: PnP/PCI Configurations

☞ PCI 1 IRQ Assignment

- ⏩ Auto — Auto assign IRQ to PCI 1. (Default value)
- ⏩ 3,4,5,7,9,10,11,12,14,15 — Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 1/5.

☞ PCI 2 IRQ Assignment

- ⏩ Auto — Auto assign IRQ to PCI 2. (Default value)
- ⏩ 3,4,5,7,9,10,11,12,14,15 — Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 2.

☞ PCI 3 IRQ Assignment

- ⏩ Auto — Auto assign IRQ to PCI 3. (Default value)
- ⏩ 3,4,5,7,9,10,11,12,14,15 — Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 3.

PC Health Status

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PC Health Status

Vcore	OK	Item Help
DDR25	OK	Menu Level ▶
+3.3V	OK	
+12V	OK	
CPU Thermistor Temperature	40°C	
Current CPU FAN Speed	3125 RPM	
Current SYSTEM FAN Speed	0 RPM	
CPU Warning Temperature	[Disabled]	
CPU FAN Fail Warning	[Disabled]	
SYSTEM FAN Fail Warning	[Disabled]	

↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults

Figure 7: PC Health Status

☞ Current Voltage(V) Vcore / DDR25 / +3.3V / +12V

⏩ Detect system's voltage status automatically.

☞ Current Thermistor Temperature

⏩ Detect CPU temperature automatically.

☞ Current CPU/SYSTEM FAN Speed (RPM)

⏩ Detect CPU/system fan speed status automatically.

☞ CPU Warning Temperature

⏩ Disabled	Disable this function. (Default value)
⏩ 60°C / 140°F	Alarm when current temperature is over 60°C / 140°F.
⏩ 70°C / 158°F	Alarm when current temperature is over 70°C / 158°F.
⏩ 80°C / 176°F	Alarm when current temperature is over 80°C / 176°F.
⏩ 90°C / 194°F	Alarm when current temperature is over 90°C / 194°F.

☞ CPU FAN Fail Warning

- ⏩ Disabled — Fan warning function disable. (Default value)
- ⏩ Enabled — Enalbe fan warning alarm when fan stops.

☞ SYSTEM FAN Fail Warning

- ⏩ Disabled — Fan warning function disable. (Default value)
- ⏩ Enabled — Enalbe fan warning alarm when fan stops.

Frequency/Voltage Control

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Frequency/Voltage Control

CPU Clock	[200]	Item Help
CPU Voltage Control	[Normal]	Menu Level ▶
AGP Voltage Control	[Normal]	
DDR Voltage Control	[Normal]	

↑↓→←: Move Enter:Select +/-/PU/PD: Value F10: Save ESC:Exit F1: General Help

F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

Figure 8: Frequency/Voltage Control

☞ CPU Clock

⏩ 200 ~ 250 Set CPU Host Clock from 200MHz to 250MHz.

☞ CPU Voltage Control

⏩ Supports adjustable CPU vcore from +5.0% to +10.0%.
(Default value: Normal)

💣 CPU may be damaged or reduce CPU life-cycle when CPU is over-voltage.
Incorrect using it may cause your system broken. For power End-User use only!

☞ AGP Voltage Control

⏩ Normal Set AGP voltage control to Normal. (Default value)

⏩ +0.1V Increase AGP voltage control to +0.1V.

⏩ +0.2V Increase AGP voltage control to +0.2V.

⏩ +0.3V Increase AGP voltage control to +0.3V.

💣 Incorrect using it may cause your system broken. For power End-User use only!

☞ DDR Voltage Control

- ⏩ Normal — Set DDR voltage control to Normal. (Default value)
- ⏩ +0.1V — Increase DDR voltage control to +0.1V.
- ⏩ +0.2V — Increase DDR voltage control to +0.2V.

💣 Incorrect using it may cause your system broken. For power End-User use only!

Top Performance

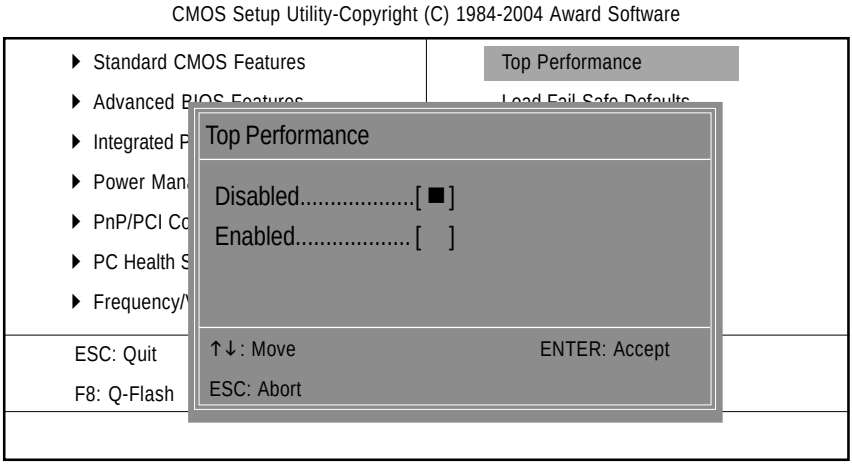


Figure 9: Top Performance

Top Performance

If you wish to maximize the performance of your system, set "Top Performance" as "Enabled".

- Disabled — Disable this function. (Default value)
- Enabled — Enable Top Performance function.

"Top Performance" will increase H/W working speed. Different system configuration (both H/W component and OS) will effect the result. For example, the same H/W configuration might not run properly with Windows XP, but works smoothly with Windows NT. Therefore, if your system is not perform enough, the reliability or stability problem will appear sometimes, and we will recommend you disabling the option to avoid the problem as mentioned above.

Load Fail-Safe Defaults

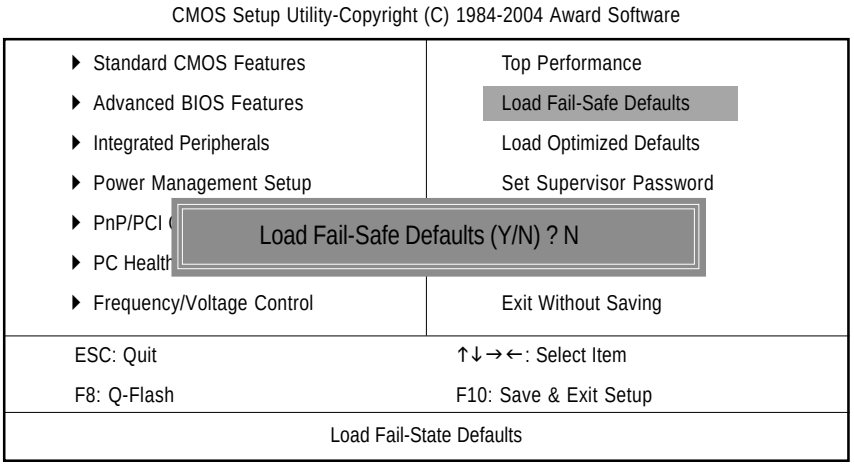


Figure 9: Load Fail-Safe Defaults

Load Fail-Safe Defaults

Fail-Safe defaults contain the most appropriate values of the system parameters that allow minimum system performance.

Load Optimized Defaults

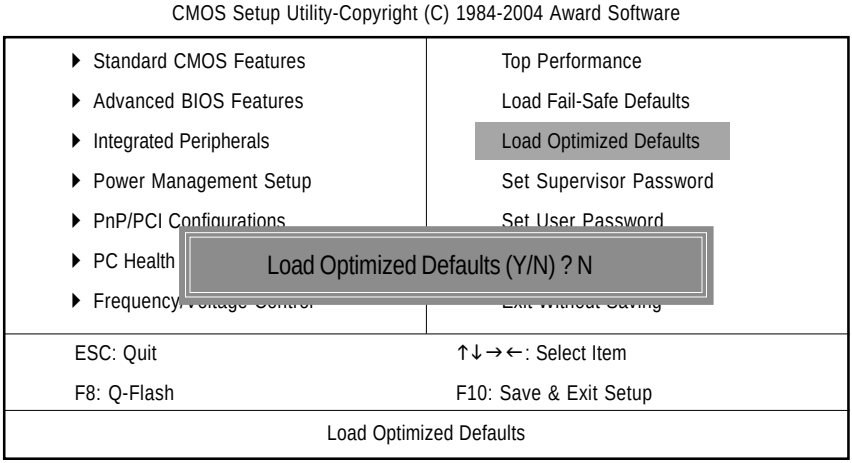


Figure 10: Load Optimized Defaults

Load Optimized Defaults

Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

Set Supervisor/User Password

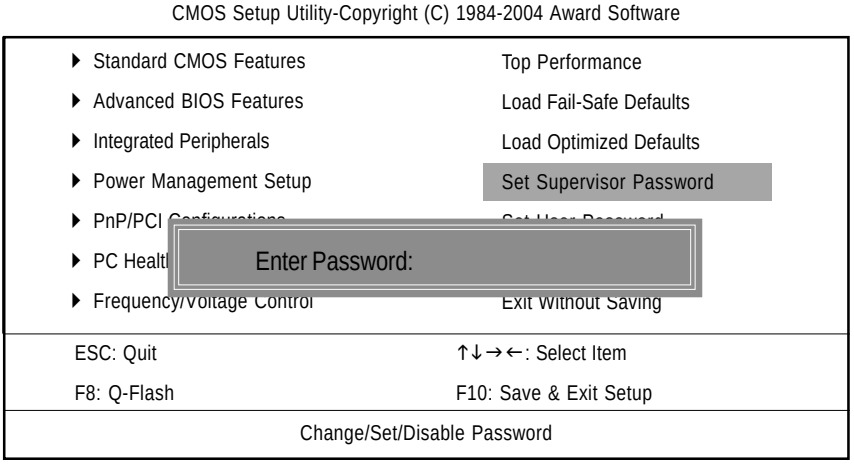


Figure 11: Password Setting

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Type the password, up to eight characters, and press <Enter>. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable password, just press <Enter> when you are prompted to enter password. A message "PASSWORD DISABLED" will appear to confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

The BIOS Setup program allows you to specify two separate passwords:

SUPERVISOR PASSWORD and a USER PASSWORD. When disabled, anyone may access all BIOS Setup program function. When enabled, the Supervisor password is required for entering the BIOS Setup program and having full configuration fields, the User password is required to access only basic items.

If you select "System" at "Password Check" in Advance BIOS Features Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup Menu.

If you select "Setup" at "Password Check" in Advance BIOS Features Menu, you will be prompted only when you try to enter Setup.

Save & Exit Setup

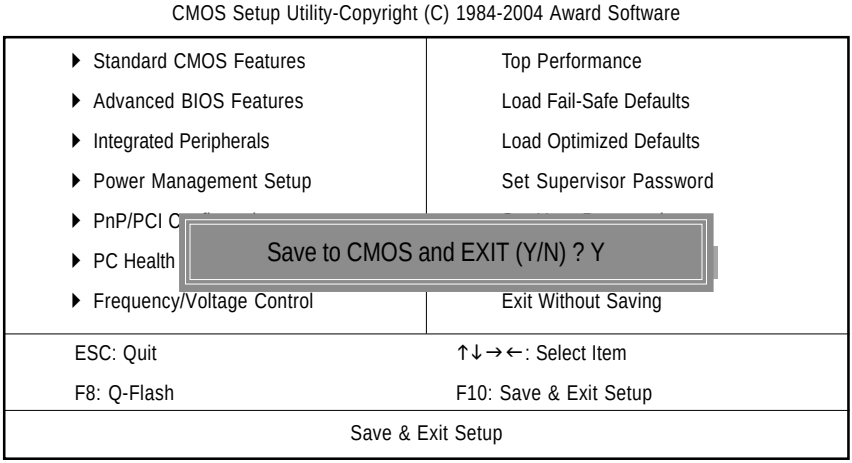


Figure 12: Save & Exit Setup

Type "Y" will quit the Setup Utility and save the user setup value to RTC CMOS.
Type "N" will return to Setup Utility.

Exit Without Saving

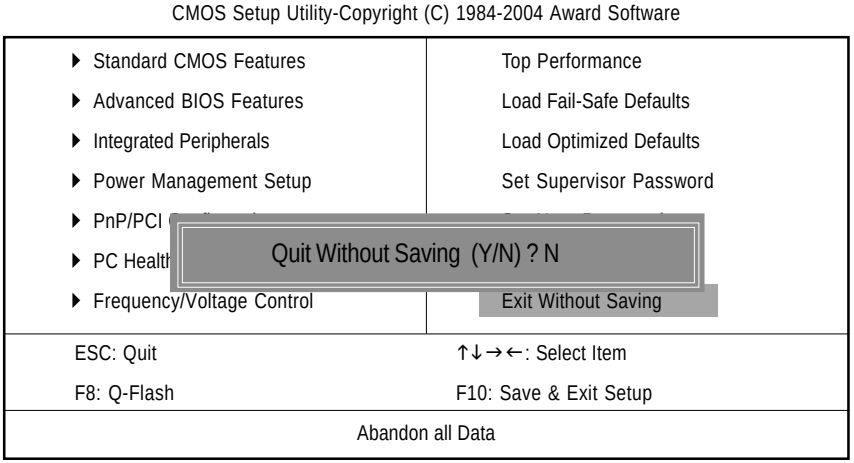


Figure 13: Exit Without Saving

Type "Y" will quit the Setup Utility without saving to RTC CMOS.

Type "N" will return to Setup Utility.

Chapter 4 Technical Reference

@BIOS™ Introduction

Gigabyte announces @BIOS™
Windows BIOS live update utility



Have you ever updated BIOS by yourself? Or like many other people, you just know what BIOS is, but always hesitate to update it? Because you think updating newest BIOS is unnecessary and actually you don't know how to update it.

Maybe not like others, you are very experienced in BIOS updating and spend quite a lot of time to do it. But of course you don't like to do it too much. First, download different BIOS from website and then switch the operating system to DOS mode. Secondly, use different flash utility to update BIOS. The above process is not a interesting job. Besides, always be carefully to store the BIOS source code correctly in your disks as if you update the wrong BIOS, it will be a nightmare.

Certainly, you wonder why motherboard vendors could not just do something right to save your time and effort and save you from the lousy BIOS updating work? Here it comes! Now Gigabyte announces @BIOS - the first Windows BIOS live update utility. This is a smart BIOS update software. It could help you to download the BIOS from internetand update it. Not like the other BIOS update software, it's a Windows utility. With the help of "@BIOS", BIOS updating is no more than a click.

Besides, no matter which mainboard you are using, if it's a Gigabyte's product, @BIOS helps you to maintain the BIOS. This utility could detect your correct mainboard model and help you to choose the BIOS accordingly. It then downloads the BIOS from the nearest Gigabyte ftp site automatically. There are several different choices; you could use "Internet Update" to download and update your BIOS directly. Or you may want to keep a backup for your current BIOS, just choose "Save Current BIOS" to save it first. You make a wise choice to use Gigabyte, and @BIOS update your BIOS smartly. You are now worry free from updating wrong BIOS, and capable to maintain and manage your BIOS easily. Again, Gigabyte's innovative product erects a milestone in mainboard industries.

For such a wonderful software, how much it costs? Impossible! It's free! Now, if you buy a Gigabyte's motherboard, you could find this amazing software in the attached driver CD. But please remember, connected to internet at first, then you could have a internet BIOS update from your Gigabyte @BIOS.

EasyTune™ 4 Introduction

Gigabyte announces *EasyTune™ 4*

Windows based Overclocking utility

EasyTune 4 carries on the heritage so as to pave the way for future generations.



Overclock might be one of the most common issues in computer field. But have many users ever tried it? The answer is probably "no". Because "Overclock" is thought to be very difficult and includes a lot of technical know-how, sometimes "Overclock" is even considered as special skills found only in some enthusiasts. But as to the experts in "Overclock", what's the truth? They may spend quite a lot of time and money to study, try and use many different hardware or BIOS tools to do "Overclock". And even with these technologies, they still learn that it's quite a risk because the safety and stability of an "Overclock" system is unknown. Now everything is different because of a Windows based overclocking utility "EasyTune 4" --announced by Gigabyte. This windows based utility has totally changed the gaming rule of "Overclock". This is the first windows based overclocking utility is suitable for both normal and power users. Users can choose either "Easy Mode" or "Advanced Mode" for overclocking at their convenience. For users who choose "Easy Mode", they just need to click "Auto Optimize" to have autoed and immediate CPU overclocking. This software will then overdrive CPU speed automatically with the result being shown in the control panel. If users prefer "Overclock" by them, there is also another choice. Click "Advanced Mode" to enjoy "sport drive" class Overclocking user interface. "Advanced Mode", allows users to change the system bus / AGP / Memory working frequency in small increments to get ultimate system performance. It operates in coordination with Gigabyte motherboards. Besides, it is different from other traditional over-clocking methods, EasyTune 4 doesn't require users to change neither BIOS nor hardware switch/ jumper setting; on the other hand, they can do "Overclock" at easy step . Therefore, this is a safer way for "Overclock" as nothing is changed on software or hardware. If user runs EasyTune 4 over system's limitation, the biggest lost is only to restart the computer again and the side effect is then well controlled. Moreover, if one well-performed system speed has been tested in EasyTune 4, user can "Save" this setting and "Load" it in next time. Obviously, Gigabyte EasyTune 4 has already turned the "Overclock" technology toward to a newer generation. This wonderful software is now free bundled in Gigabyte motherboard attached in driver CD. Users may make a test drive of "EasyTune 4" to find out more amazing features by themselves.

*Some Gigabyte products are not fully supported by EasyTune 4. Please find the products supported list in the web site.

*Any "Overclocking action" is at user's risk, Gigabyte Technology will not be responsible for any damage or instability to your processor, motherboard, or any other components.

Flash BIOS Method Introduction

Method 1 : Q-Flash™ Utility



Q-Flash™ is a BIOS flash utility embedded in Flash ROM. With this utility, users only have to stay in the BIOS menu when they want to update BIOS. Q-Flash™ allows users to flash BIOS without any utility in DOS or Windows. Using Q-Flash™ indicating no more fooling around with any complicated instructions and operating system since it is in the BIOS menu.



Please note that because updating BIOS has potential risk, please do it with caution!! We are sorry that Gigabyte Technology Co., Ltd is not responsible for damages of system because of incorrect manipulation of updating BIOS to avoid any claims from end-users.

Before You Begin:

Before you start updating BIOS with the Q-Flash™ utility, please follow the steps below first.

1. Download the latest BIOS for your motherboard from Gigabyte's website.
2. Extract the BIOS file downloaded and save the BIOS file (the one with model name.Fxx. For example, 7VRXP.F12) to a floppy disk.
3. Reboot your PC and press **Del** to enter BIOS menu.

The BIOS upgrading guides below are separated into two parts.

If your motherboard has dual BIOS, please refer to **Part One**.

If your motherboard has single BIOS, please refer to **Part Two**.

Part One:

Updating BIOS with Q-Flash™ Utility on Dual BIOS Motherboards.

Some of Gigabyte motherboards are equipped with dual BIOS. In the BIOS menu of the motherboards supporting Q-Flash™ and Dual BIOS, the Q-Flash™ utility and Dual BIOS utility are combined in the same screen. This section only deals with how to use Q-Flash™ utility.

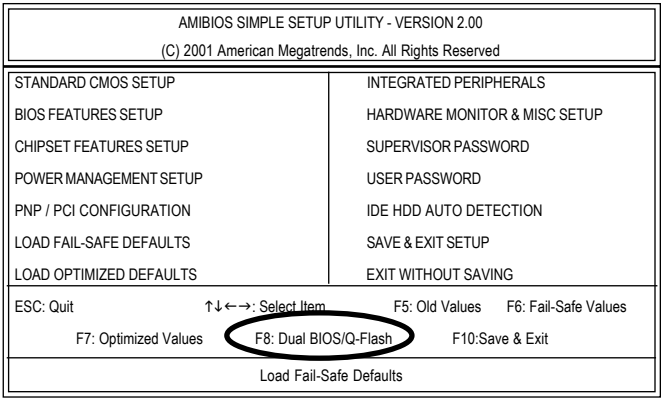
In the following sections, we take GA-7VRXP as the example to guide you how to flash BIOS from an older version to the latest version. For example, from F10 to F12.

The BIOS file is F10 before updating

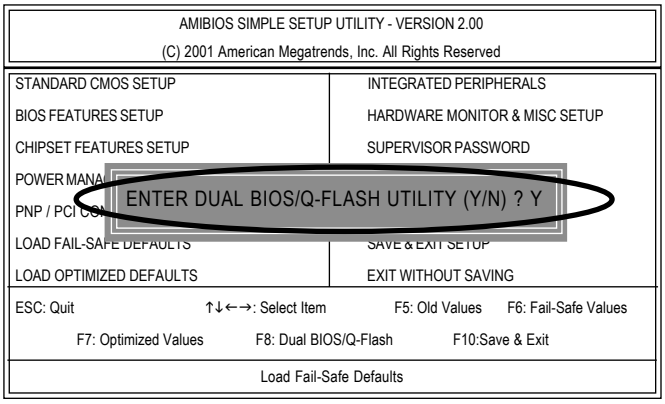


Entering the Q-Flash™ utility:

Step1: To use Q-Flash™ utility, you must press **Del** in the boot screen to enter BIOS menu.

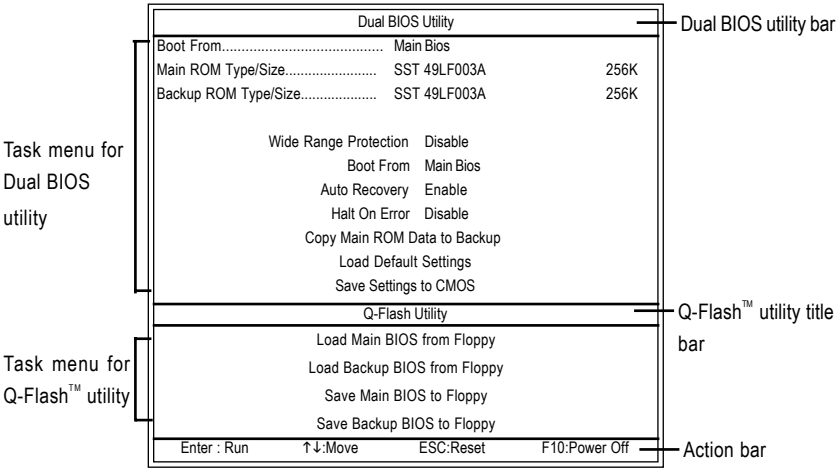


Step 2: Press **F8** button on your keyboard and then **Y** button to enter the Q-Flash™ utility.



Exploring the Q-Flash™ / Dual BIOS utility screen

The Q-Flash™ / Dual BIOS utility screen consists of the following key components.



Task menu for Dual BIOS utility:

Contains the names of eight tasks and two item showing information about the BIOS ROM type. Blocking a task and pressing **Enter** key on your keyboard to enable execution of the task.

Task menu for Q-Flash™ utility:

Contains the names of four tasks. Blocking a task and pressing Enter key on your keyboard to enable execution of the task.

Action bar:

Contains the names of four actions needed to operate the Q-Flash™/Dual BIOS utility. Pressing the buttons mentioned on your keyboards to perform these actions.

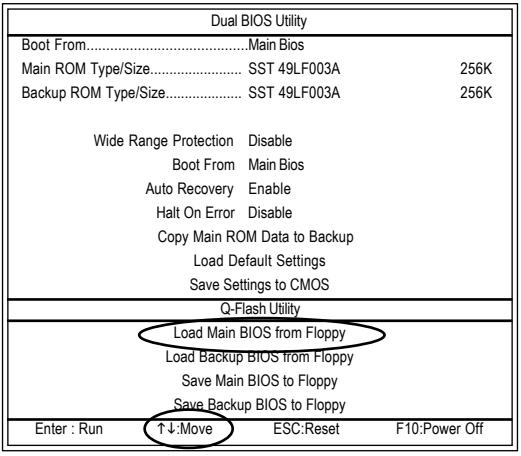
Using the Q-Flash™ utility:

This section tells you how to update BIOS using the Q-Flash™ utility. As described in the "Before you begin" section above, you must prepare a floppy disk having the BIOS file for your motherboard and insert it to your computer. If you have already put the floppy disk into your system and have entered the Q-Flash™ utility, please follow the steps below to flash BIOS.

Steps:

1. Press arrow buttons on your keyboard to move the light bar to "Load Main BIOS from Floppy" item in the Q-Flash™ menu and press Enter button.

NOTE If you want to save the current BIOS for backup purpose, you can begin Step 1 with "Save Main BIOS to Floppy" item.

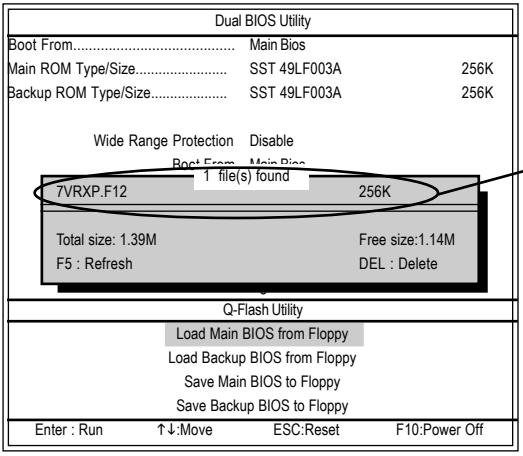


Later, you will see a box pop up showing the BIOS files you previously downloaded to the floppy disk.

2. Move to the BIOS file you want to flash and press **Enter**.

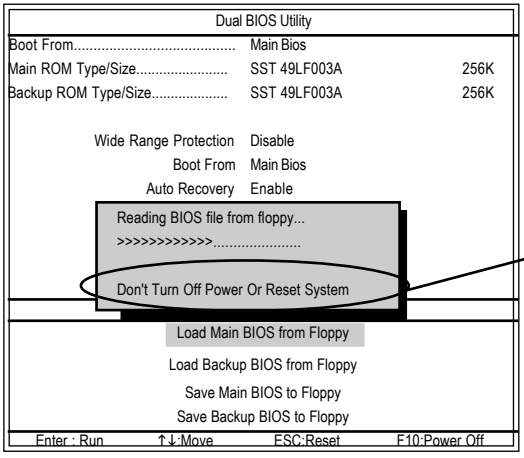
In this example, we only download one BIOS file to the floppy disk so only one BIOS file, 7VRXP.F12, is listed.

CAUTION Please confirm again you have the correct BIOS file for your motherboard.



BIOS file in the floppy disk.

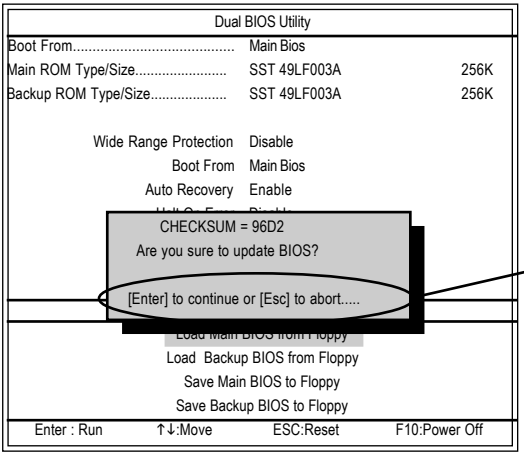
After pressing **Enter,** you'll then see the progress of reading the BIOS file from the floppy disk.



CAUTION Do not truning off power or reset your system at this stage!!

CAUTION Please do not take out the floppy disk when it begins flashing BIOS.

After BIOS file is read, you'll see a confirmation dialog box asking you "Are you sure to update BIOS?"

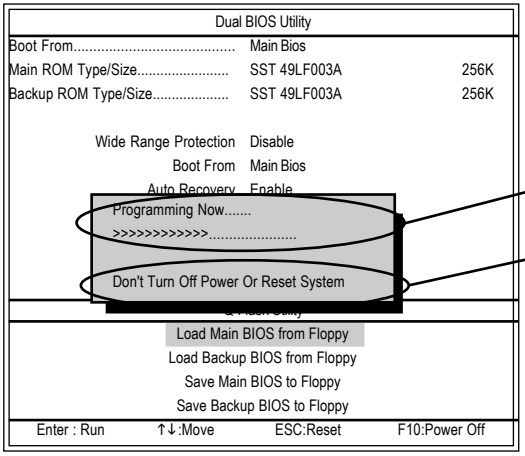


NOTE

You can press "Enter" to continue updating BIOS or "ESC" to abort.

3. Press **Y** button on your keyboard after you are sure to update BIOS.

Then it will begin to update BIOS. The progress of updating BIOS will be displayed.



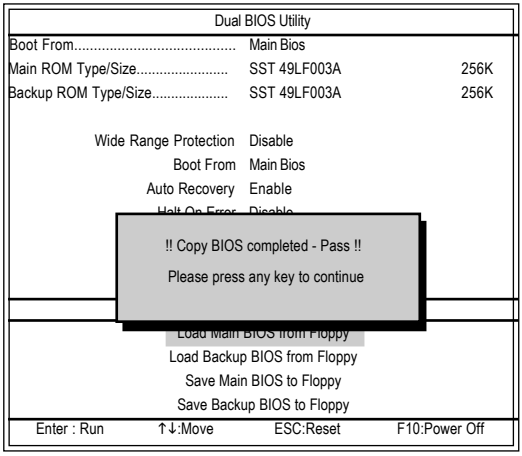
The progress of updating BIOS.

CAUTION

Do not turning off power or reset your system at this stage to avoid damaging your BIOS rom!!

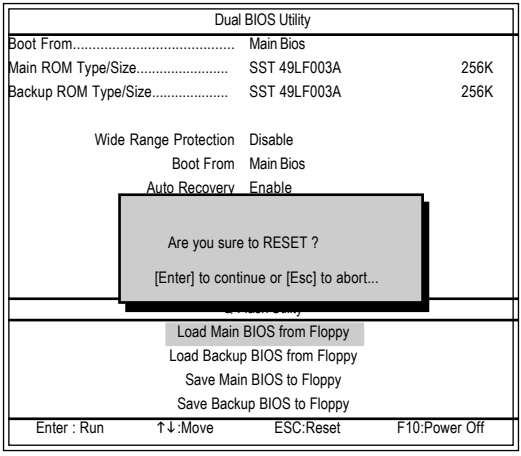
CAUTION Please do not take out the floppy disk when it begins flashing BIOS.

4. Press any keys to return to the Q-Flash™ menu when the BIOS updating procedure is completed.



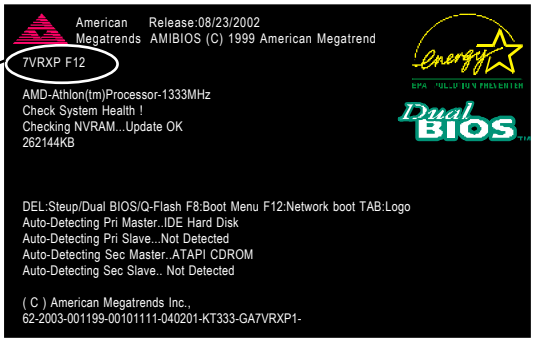
NOTE You can repeat Step 1 to 4 to flash the backup BIOS, too.

5. Press **Esc** and then **Y** button to exit the Q-Flash™ utility. The computer will restart automatically after you exit Q-Flash™.



After system reboots, you may find the BIOS version on your boot screen becomes the one you flashed.

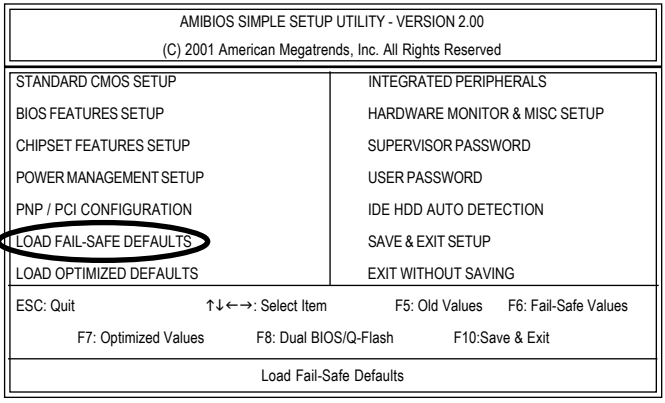
The BIOS file becomes F12 after updating

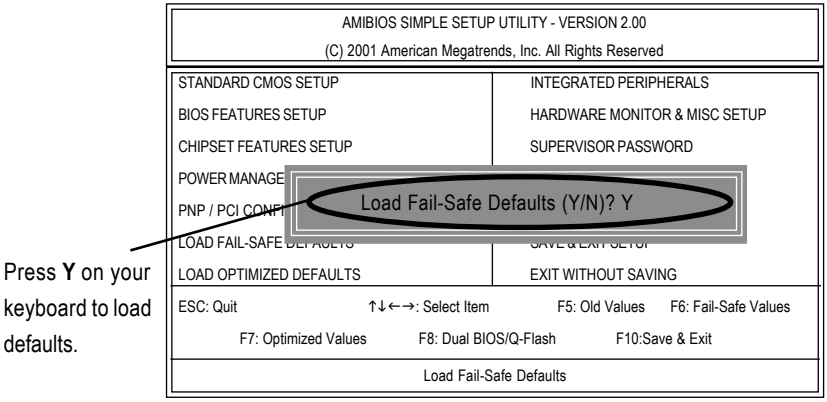


NOTE The following is an AMI BIOS menu screen. However, you can also find similar option in AWARD BIOS menu.

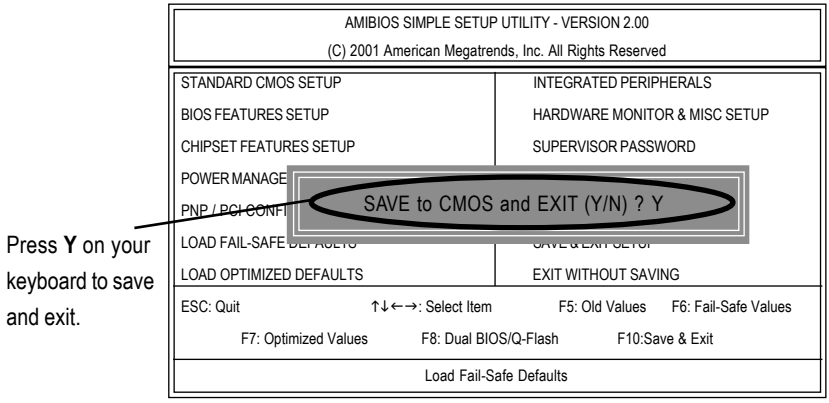
6. Press **Del** to enter BIOS menu after system reboots. When you are in BIOS menu, move to **Load Fail-Safe Defaults** item and press **Enter** to load BIOS Fail-Safe Defaults. Normally the system redetects all devices after BIOS has been upgraded. Therefore, we highly recommend reloading the BIOS defaults after BIOS has been upgraded.

Press **Enter** on your keyboard





7. Select **Save & Exit Setup** item to save the settings to CMOS and exit the BIOS menu. System will reboot after you exit the BIOS menu. The procedure is completed.



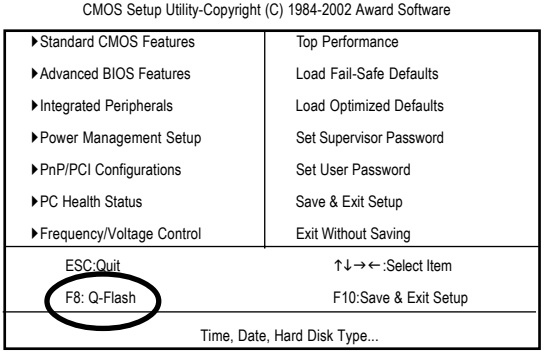
Part Two:

Updating BIOS with Q-Flash™ Utility on Single-BIOS Motherboards.

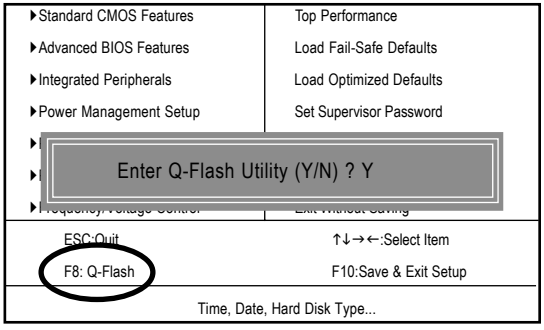
This part guides users of single-BIOS motherboards how to update BIOS using the Q-Flash™ utility.

Entering the Q-Flash™ utility:

Step1: To use the Q-Flash™ utility, you must press **Del** in the boot screen to enter BIOS menu.

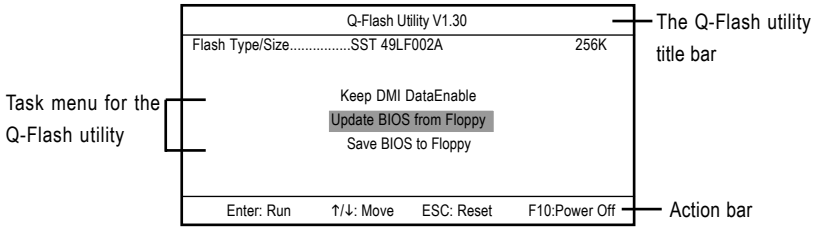


2. Press **F8** on your keyboard and then **Y** button to enter the Q-Flash™ utility.



Exploring the Q-Flash™ utility screen

The Q-Flash™ BIOS utility screen consists of the following key components.



Task menu for the Q-Flash™ utility: Contains the names of three tasks. Blocking a task and pressing **Enter** key on your keyboard to enable execution of the task.

Action bar: Contains the names of four actions needed to operate the Q-Flash™ utility. Pressing the buttons mentioned on your keyboard to perform these actions.

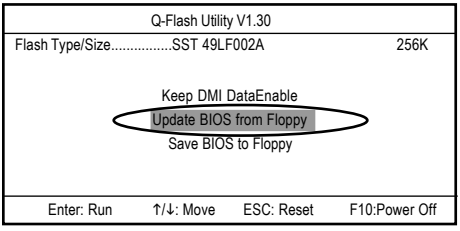
Using the Q-Flash™ utility:

This section tells you how to update BIOS using the Q-Flash™ utility. As described in the "Before you begin" section above, you must prepare a floppy disk having the BIOS file for your motherboard and insert it to your computer. If you have already put the floppy disk into your system and have enter the Q-Flash™ utility, please follow the steps below to flash BIOS.

Steps:

1. Press arrow buttons on your keyboard to move the light bar to "Load Main BIOS from Floppy" item in the Q-Flash™ menu and press **Enter** button.

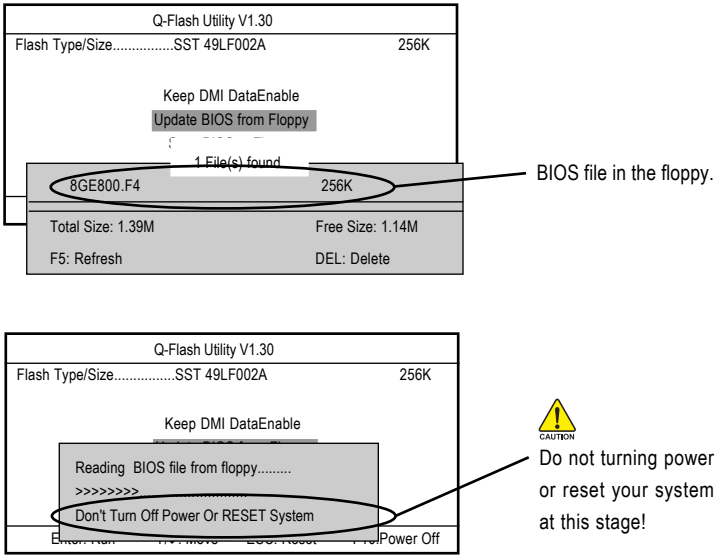
NOTE If you want to save the current BIOS for backup purpose, you can begin Step 1 with **Save Main BIOS to Floppy** item.



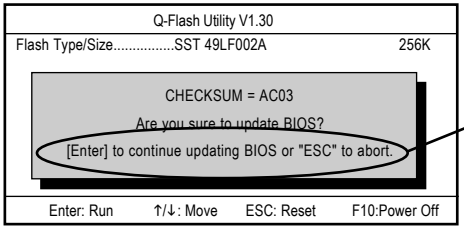
Later, you will see a box showing the BIOS files you downloaded to the floppy disk.
In this example, we only download one BIOS for this board, 8GE800.F4 so only one BIOS file is listed.

2.Highlight the BIOS file you want to flash and press **Enter** button on your keyboard to enable reading from the BIOS file from the floppy.

CAUTION Please confirm again you have the correct BIOS file for your motherboard.

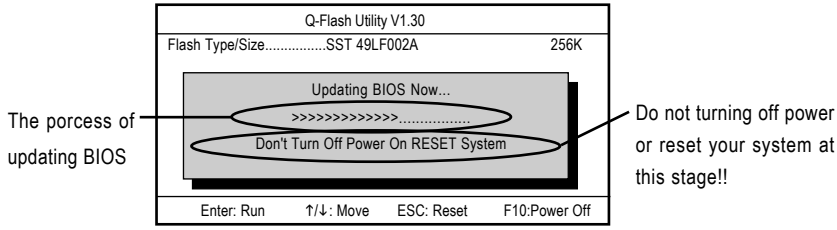


After BIOS file is read, you'll see a confirmation dialog box asking you "Are you sure to update BIOS?"

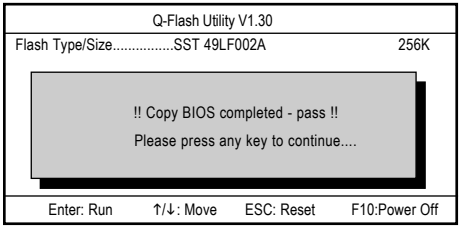


3. Press **Y** button if you make sure to update BIOS.

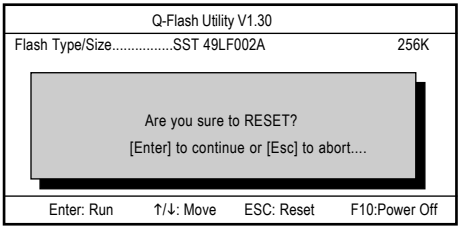
 Then it will begin to update BIOS. The progress of updating will be shown at the same time.



4. Press any keys to return to the Q-Flash™ menu when the BIOS updating procedure is completed.



5. Press **Esc** and then **Enter** to exit the Q-Flash™ utility. System will restart.

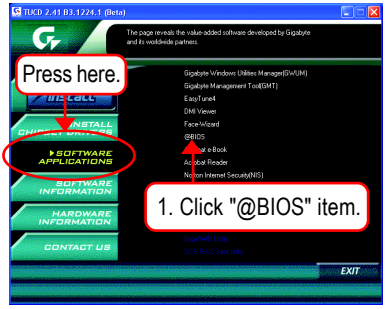


6. Press **Del** to enter BIOS menu after system reboots and load BIOS Fail-Safe Defaults. See how to load BIOS Fail-Safe Defaults, please kindly refer to Step 6 to 7 in Part One.

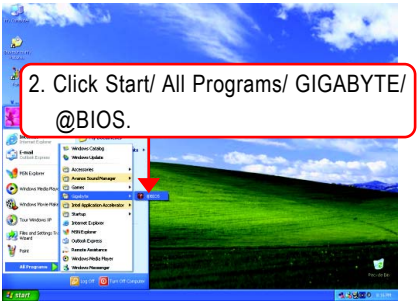
Congratulation!! You have updated BIOS successfully!!

Method 2 : @BIOS Utility

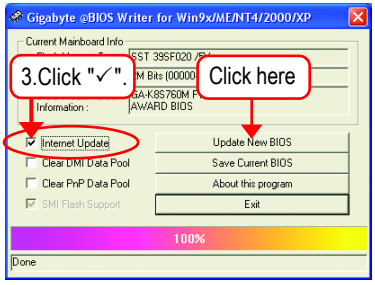
If you don't have DOS boot disk, we recommend that you used Gigabyte @BIOS™ program to flash BIOS.



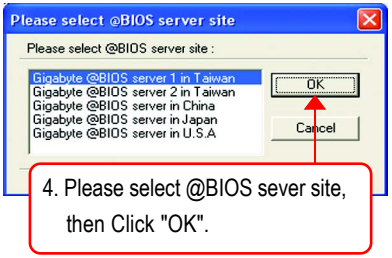
(1)



(2)



(3)



(4)

Methods and steps:

I. Update BIOS through Internet

a. Click "Internet Update" icon
b. Click "Update New BIOS" icon
c. Select @BIOS™ sever
d. Select the exact model name on your motherboard.
e. System will automatically download and update the BIOS.

II. Update BIOS NOT through Internet:

a. Do not click "Internet Update" icon
b. Click "Update New BIOS"
c. Please select "All Files" in dialog box while opening the old file.
d. Please search for BIOS unzip file, downloading from internet or any other methods (such as: K8S760M.F1z).
e. Complete update process following the instruction.

III. Save BIOS

In the very beginning, there is "Save Current BIOS" icon shown in dialog box. It means to save the current BIOS version.

IV. Check out supported motherboard and Flash ROM:

In the very beginning, there is "About this program" icon shown in dialog box. It can help you check out which kind of motherboard and which brand of Flash ROM are supported.

Note:

a. In method I, if it shows two or more motherboard's model names to be selected, please make sure your motherboard's model name again. Selecting wrong model name will cause the system unbooted.
b. In method II, be sure that motherboard's model name in BIOS unzip file are the same as your motherboard's. Otherwise, your system won't boot.
c. In method I, if the BIOS file you need cannot be found in @BIOS™ server, please go onto Gigabyte's web site for downloading and updating it according to method II.
d. Please note that any interruption during updating will cause system unbooted

2- / 4- / 6-Channel Audio Function Introduction

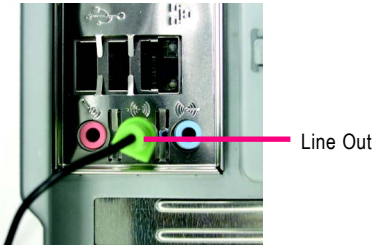
The installation of Windows 98SE/2K/ME/XP is very simple. Please follow next step to install the function!

Stereo Speakers Connection and Settings:

We recommend that you use the speaker with amplifier to acqiire the best sound effect if the stereo output is applied.

STEP 1:

Connect the stereo speakers or earphone to "Line Out".



STEP 2 :

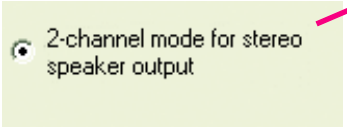
After installation of the audio driver, you'll find an icon on the taskbar's status area. Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.

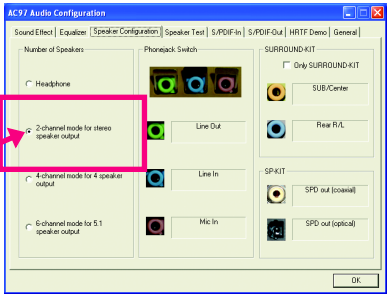




STEP 3:

Select "Speaker Configuration", and choose the "2 channels for stereo speaker out put".





4 Channel Analog Audio Output Mode

STEP 1 :

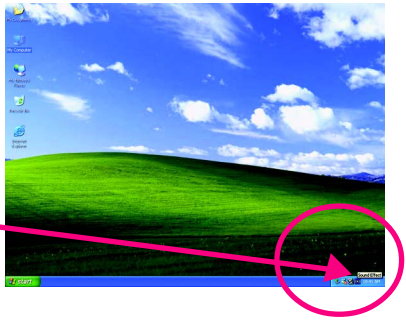
Connect the front channels to "Line Out", the rear channels to "Line In".



STEP 2 :

After installation of the audio driver, you'll find an icon on the taskbar's status area. Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.

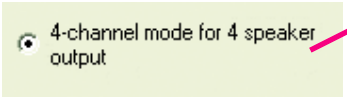


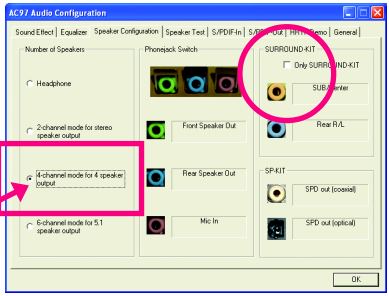


STEP 3 :

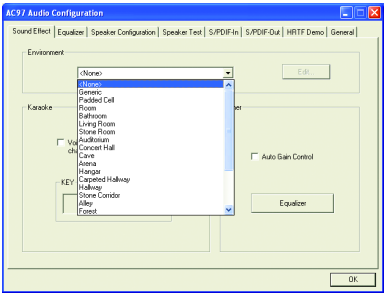
Select "Speaker Configuration", and choose the "4 channels for 4 speaker out put".

Disable "Only SURROUND-KIT", and press "OK".





When the "Environment settings" is "None", the sound would be performed as stereo mode (2 channels output). Please select the other settings for 4 channels output.

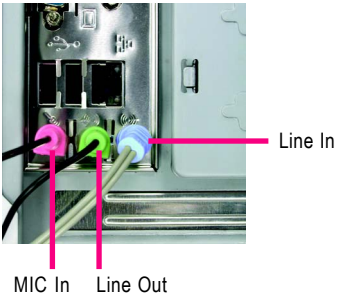


Basic 6 Channel Analog Audio Output Mode

Use the back audio panel to connect the audio output without any additional module.

STEP 1 :

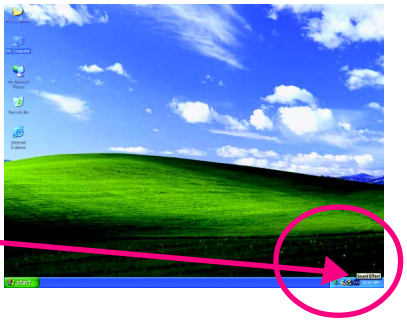
Connect the front channels to "Line Out", the rear channels to "Line In", and the Center/Subwoofer channels to "MIC In".



STEP 2 :

After installation of the audio driver, you'll find an icon on the taskbar's status area. Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.

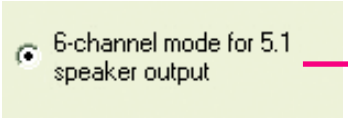


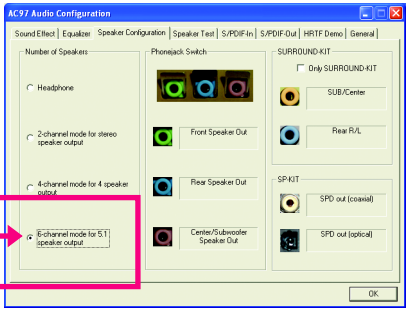


STEP 3 :

Select "Speaker Configuration", and choose the "6 channels for 5.1 speaker out put".

Disable "Only SURROUND-KIT" and pess "OK".





Advanced 6 Channel Analog Audio Output Mode (using Audio Combo Kit, Optional Device):

(Audio Combo Kit provides SPDIF output port : optical & coaxis and SURROUND-KIT : Rear R/L & Center/subwoofer)

SURROUND-KIT access analog output to rear channels and Center/Subwoofer channels. It is the best solution if you need 6 channel output, Line In and MIC at the same time. "SURROUND-KIT" is included in the GIGABYTE unique "Audio Combo Kit" as picture.



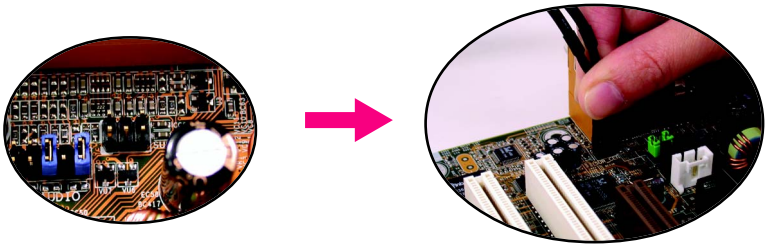
STEP 1 :

Insert the "Audio Combo Kit" in the back of the case,and fix it with the screw.



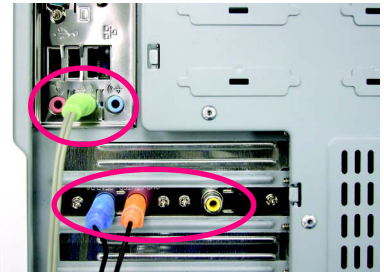
STEP 2 :

Connect the "SURROUND-KIT" to SUR_CEN on the M/B.



STEP 3 :

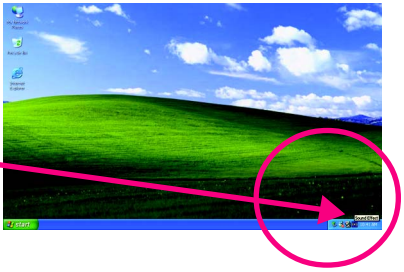
Connect the front channels to back audio panel's "Line Out", the rear channels to SURROUND-KIT's REAR R/L, and the Center/Subwoofer channels to SURROUND-KIT's SUB CENTER.



STEP 4 :

Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.

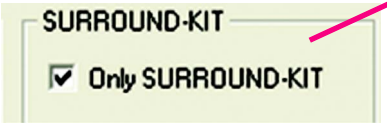


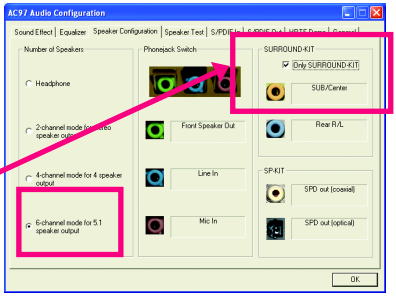


STEP 5 :

Select "Speaker Configuration", and choose the "6 channels for 5.1 speaker out put".

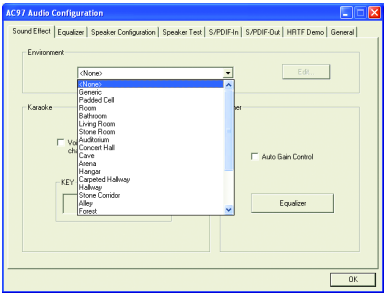
Enable "Only SURROUND-KIT" and press "OK".





Basic & Advanced 6 Channel Analog Audio Output Mode Notes:

When the "Environment settings" is "None", the sound would be performed as stereo mode (2 channels output). Please select the other settings for 6 channels output.



SPDIF Output Device (Optional Device)

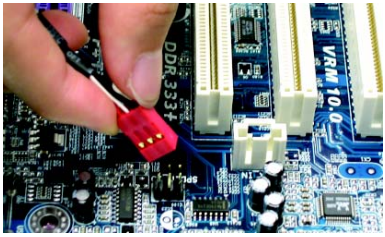
A "S/PDIF output" device is available on the motherboard. Cable with rear bracket is provided and could link to the "S/PDIF output" connector (As picture.) For the further linkage to decoder, rear bracket provides coaxial cable and Fiber connecting port.



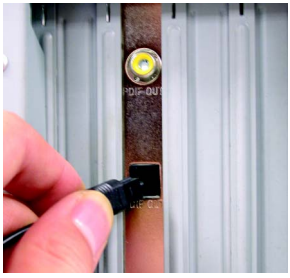
1. Connect the SPDIF output device to the rear bracket of PC, and fix it with screw.



2. Connect SPDIF wire to the motherboard.



3. Connect co-axial or optical output to the AC3 decoder.



Jack-Sensing Introduction

Jack-Sensing provides audio connectors error-detection function.

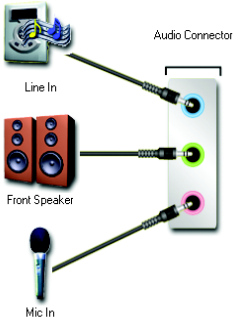
CAUTION

Install Microsoft DirectX8.1 or later version before to enable Jack-Sensing support for Windows 98/98SE/2000/ME.

Jack-Sensing includes 2 parts: AUTO and MANUAL. Following is an example for 2 channels (Windows XP):

Introduction of audio connectors

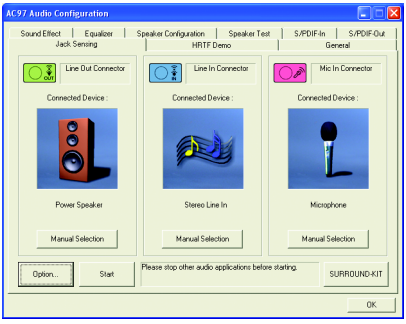
You may connect CDROM, Walkman or others audio input devices to Line In jack, speakers, earphone or others output devices to Line Out jack, and microphone to MIC In jack.



Auto-detecting:

Please connect the devices to the right jacks as above. A window will appear as right picture if you setup the devices properly.

Please note that 3D audio function will only appear when 3D audio inputs.

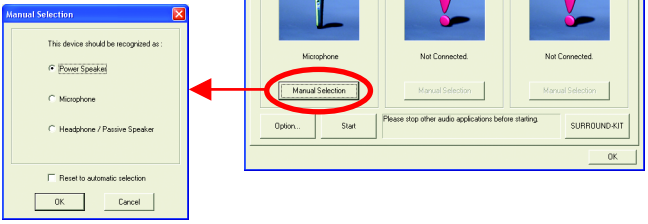


If you set wrong with the connectors, the warning message will come out as right picture.



Manual setting:

If the device picture shows different from what you set, please press "Manual Selection" to set.



Xpress Recovery Introduction

What is Xpress Recovery?

Xpress Recovery utility is an utility for backing up and restoring O.S. partition. If the hard drive can not work properly, you can restore it to the original state.

CAUTION

1. It supports FAT16, FAT32, NTFS format.
2. It must be connected to IDE1 Master.
3. It's only allows you to install one O.S.
4. It must be used with IDE hard disk supporting HPA.
5. The first partition must be set as the boot partition. When the boot partition is backed up, please do not change its size.
6. It is not recommend to use Xpress Recovery if you had ever used Ghost to return boot manager to NTFS format.

NOTE

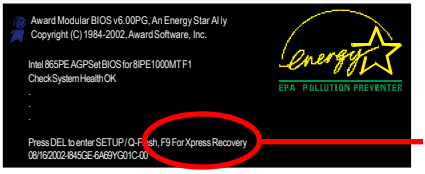
1. System data and hard disk's reading/writing speed will affect backing up speed.
2. We recommend that you install Xpress Recovery immediately after installing O.S, drivers and applications.

How to use the Xpress Recovery

There are two ways to enter the Xpress Recovery utility. (see the below)

1. Text Mode: press F9 during powering on the computer.

Press F9 during powering on the computer.



F9 For Xpress Recovery

2. BMP Mode: boot from CD-ROM

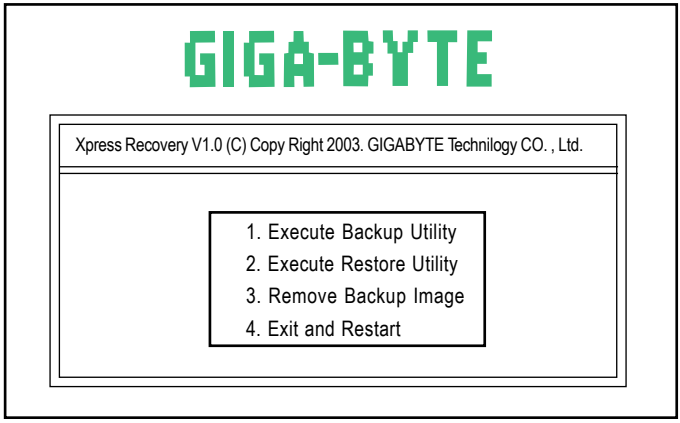
Please go to "Advanced BIOS" setting menu and set boot from CD-ROM, then save and exit the BIOS menu. Later, please insert MB driver CD into your drive when "Boot from CD:" appears at the bottom of the screen, press any key to enter Xpress Recovery.



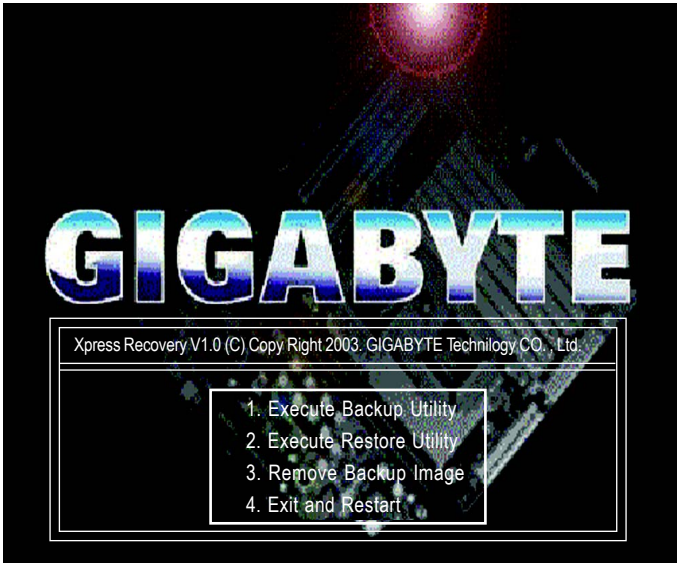
Boot from CD:

You can highlight the item by using the arrows keys on your keyboard and enter key to enter the menu.

Text Mode:



BMP Mode:



CAUTION

If you ever entered Xpress Recovery by booting from CD-ROM, you'll still be directed to BMP mode by pressing F9 in the bootup screen.

1. Excute Backup Utility:

Press B to Backup your System or Esc to Exit

The Backup utility will scan the system automatically and back it up.

The backed up data will be saved as a hidden image.

2. Excute Restore Utility:

This program will recover your system to factory default.

Press R to recover your system.

Press Esc to exit

Restore the backup image to the original state.

3. Remove Backup Image:

Do you sure to remove backup image? (Y/N)

Remove the backup image.

4. Exit and Restart:

Exit and restart your computer.

Serial ATA RAID BIOS Utility Operation Introduction

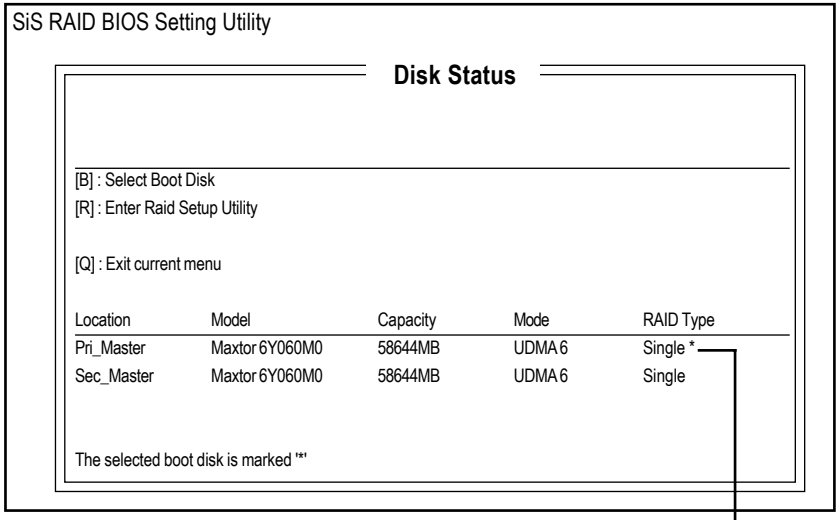
1. Boot your system. If this is the first time you have booted with the South bridge and the drives installed, the onboard BIOS will display the following screen.

```
Silicon Integrated System Corp. RAID BIOS Settings Utility V.xxxx
(c) 2003-2005 Silicon Integrated System Corp. All Rights Reserved.

Press <Ctrl><S> to run BIOS Setting Utility
```

2. Press <Ctrl>+<S> keys to display the SiS RAID BIOS Setting Utility Main Menu.

3. Press <R> to display the RAID setup menu below. This is the fastest and easiest method to creating your first array.

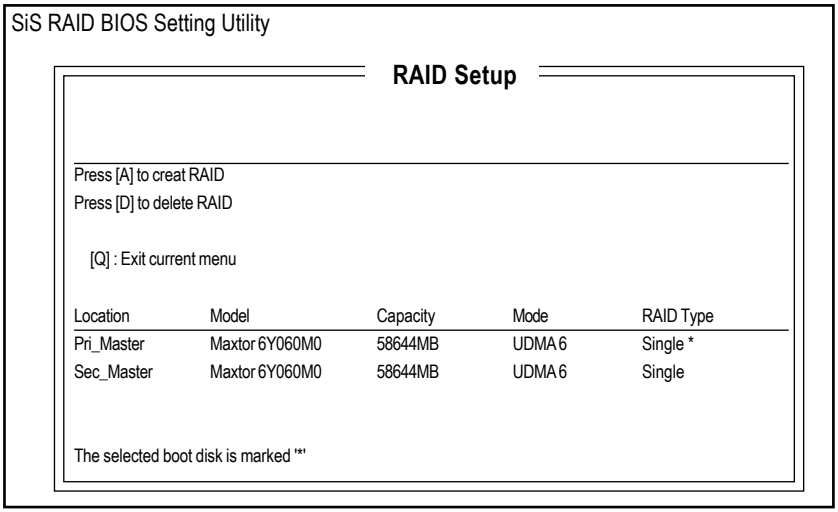


Please make sure the RAID Type is "Single" then you can set the others type that you want next.

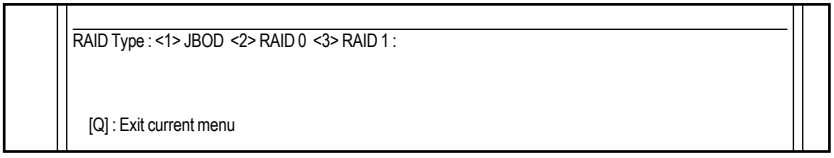
Creating a RAID 0 Array

To create an RAID 0 array, follow these steps:

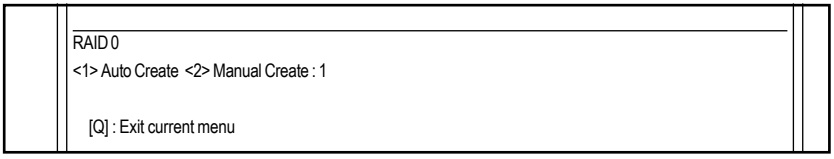
1. Press <A> to create array.



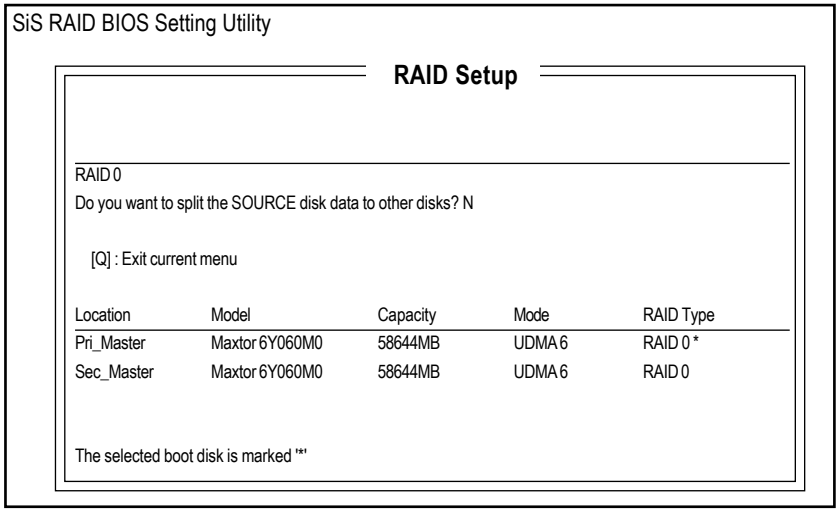
2. Press <2> and <Enter> to select RAID 0.



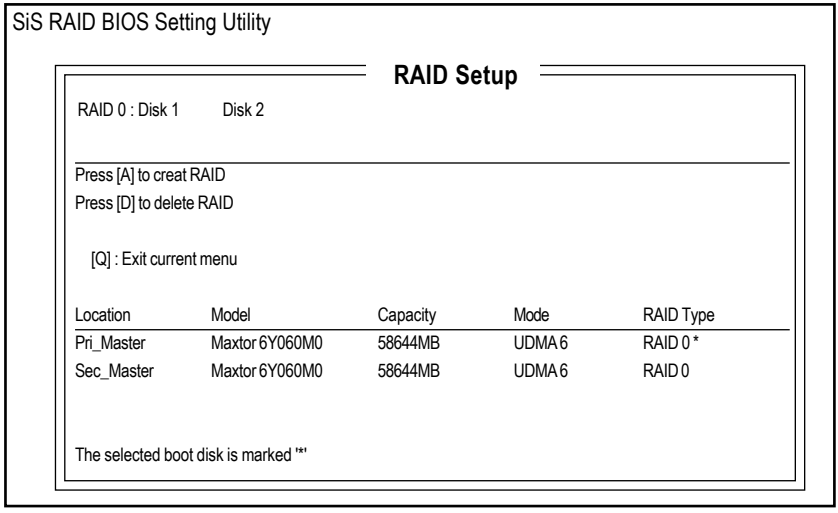
3. Press <1> and <Enter> (Note: We would not suggust your select <2> to create RAID 0 unless you really need it.)



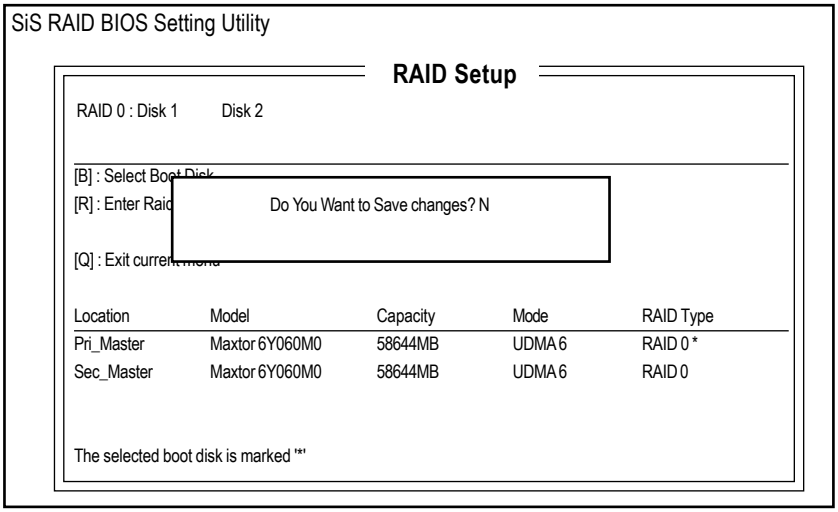
4. Press <N> and <Enter> to Create RAID 0 only. (If Press <Y> and <Enter>, it will split the data on source disk to other disks)



5. You have create RAID 0 successfully!!



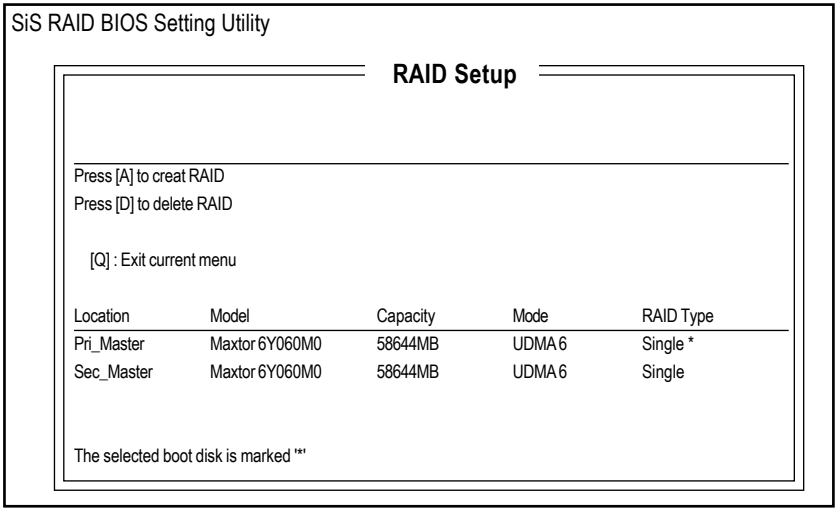
6. Press <Q> to escape the setup screen and press <Y> to save changes.



Creating a RAID 1 Array

To create an RAID 1 array, follow these steps:

1. Press <A> to create array.



2. Press <3> and <Enter> to select RAID 1.

```
RAID Type : <1> JBOD  <2> RAID 0  <3> RAID 1 :

  [Q] : Exit current menu
```

3. Press <1> and <Enter> (Note: We would not suggust your select <2> to create RAID 1 unless you really need it.)

```
RAID 1
<1> Auto Create  <2> Manual Create : 1

  [Q] : Exit current menu
```

4. Press <N> and <Enter> to Create RAID 1 only. (If Press <Y> and <Enter>, it will Duplicate the data on source disk to mirror disk)

SiS RAID BIOS Setting Utility

RAID Setup

RAID 1

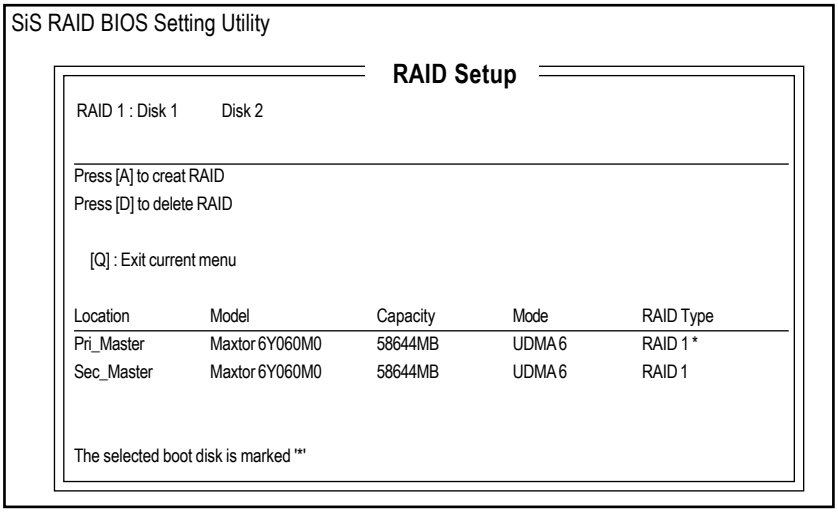
Do you want to Duplicate the SOURCE disk data to MIRROR disks? N

[Q] : Exit current menu

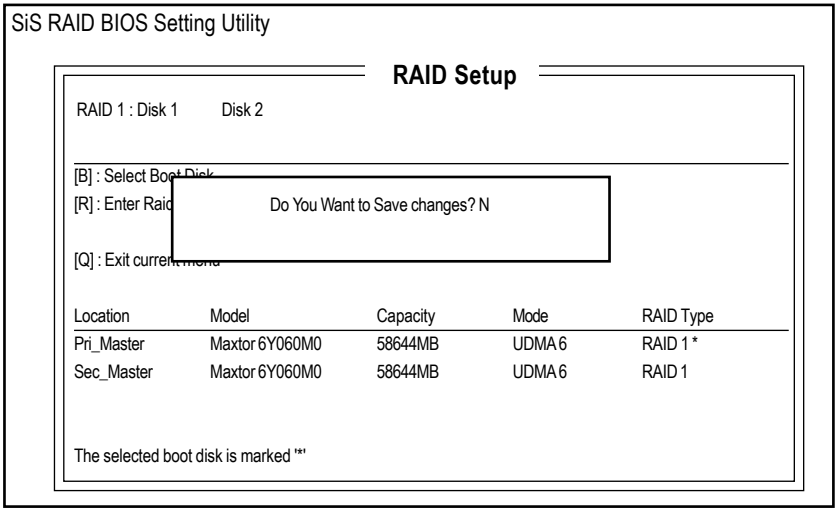
Location	Model	Capacity	Mode	RAID Type
Pri_Master	Maxtor 6Y060M0	58644MB	UDMA 6	RAID 1 *
Sec_Master	Maxtor 6Y060M0	58644MB	UDMA 6	RAID 1

The selected boot disk is marked '*'

5. You have create RAID 1 successfully!!



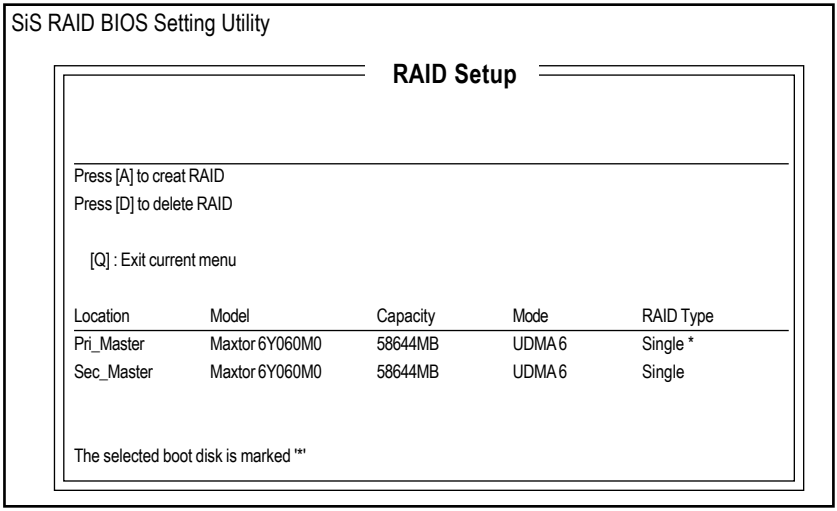
6. Press <Q> to escape the setup screen and press <Y> to save changes.



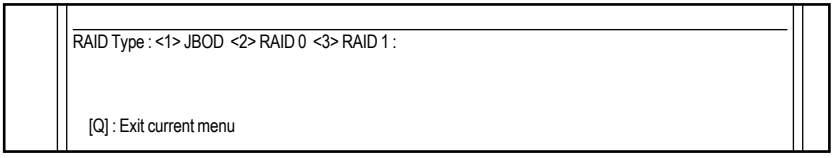
Creating a JBOD Array

To create an JBOD array, follow these steps:

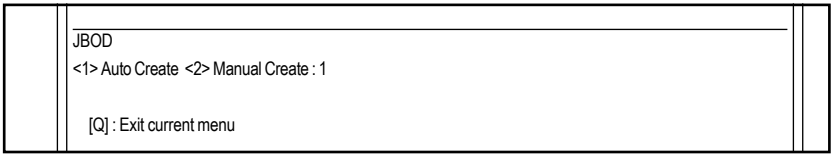
1. Press <A> to create array.



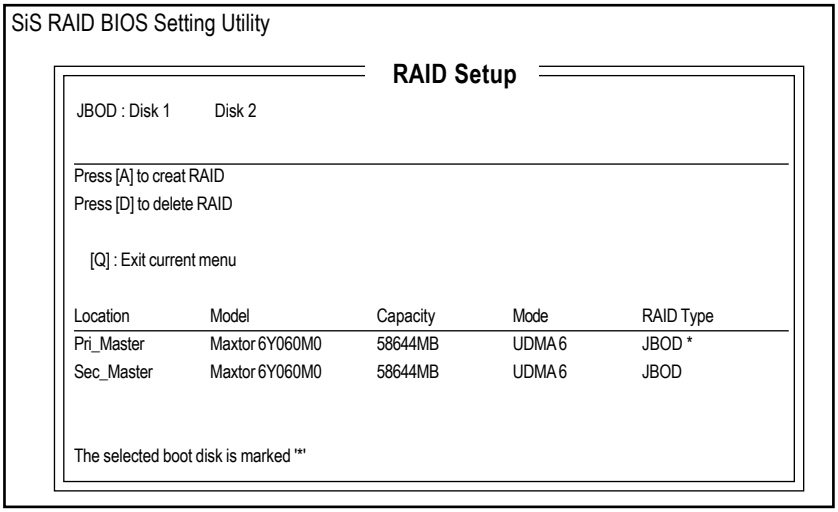
2. Press <1> and <Enter> to select JBOD.



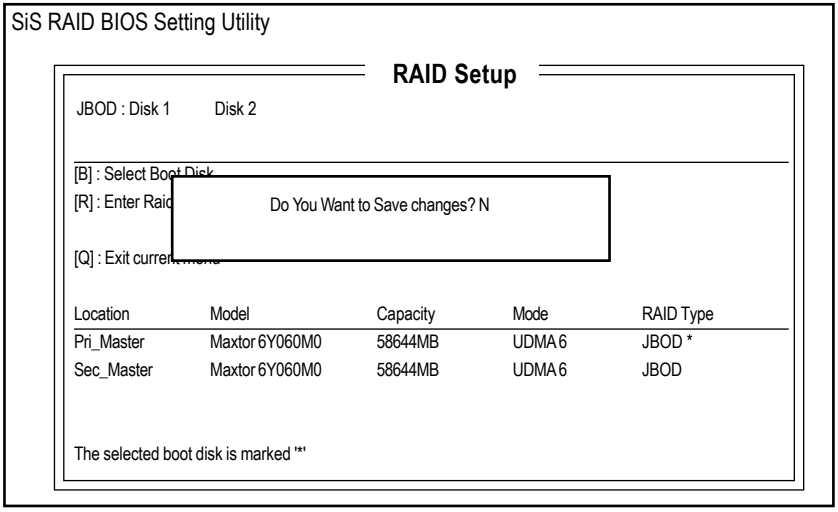
3. Press <1> and <Enter> (Note: We would not suggust your select <2> to create JBOD unless you really need it.)



4. You have create JBOD successfully!!



5. Press <Q> to escape the setup screen and press <Y> to save changes.



Chapter 5 Appendix

Install Drivers

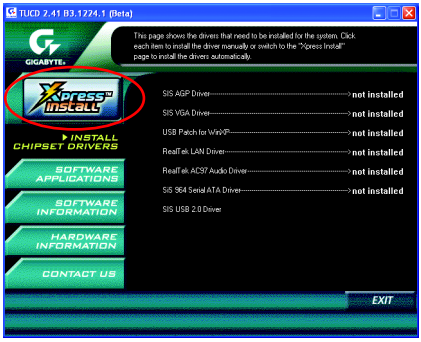
NOTE

Pictures below are shown in Windows XP (Driver CD ver 2.41 Beta)

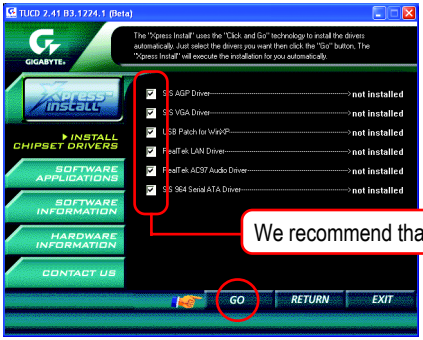
Insert the driver CD-title that came with your motherboard into your CD-ROM drive, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

INSTALL CHIPSET DRIVER

This page shows the drivers that need to be installed for the system. Click each item to install the driver manually or switch to the Xpress Install to install the drivers automatically.

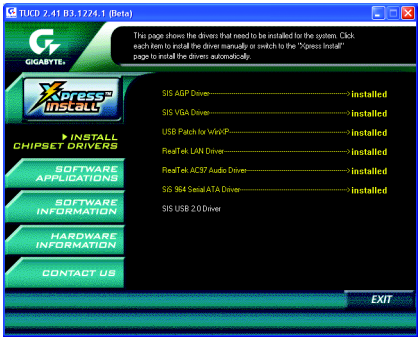


The "Xpress Install" uses the"Click and Go" technology to install the drivers automatically. Just select the drivers you want then click the "GO" button. The Xpress Install will finish the installation for you automatically.



NOTE

Massage: Some device drivers will restart your system automatically. After restarting your system the "Xpress Install" will continue to install other drivers.



NOTE

Driver installation finished !

You have to reboot system !

Item Description

- SIS AGP Driver

 AGP interface driver for SiS series chipset.
- SIS VGA Driver

 VGA driver for VGA integrated SiS series chipset.
- USB Patch for WinXP

 This patch driver can help you to resolve the USB device wake up S3 hang up issue in XP.
- RealTek LAN Driver

 RealTek 10/100 LAN driver for 81XX series chips.
- RealTek AC97 Audio Driver

 Audio driver for RealTek AC97 codec chipset.
- SiS 964 Serial ATA Driver

 Serial ATA driver for SiS 964 South Bridge.
- SIS USB 2.0 Driver

 USB2.0 driver for SiS series chipset.

For USB2.0 driver support under Windows XP operating system, please use Windows Service Pack. After install Windows Service Pack, it will show a question mark "?" in "Universal Serial Bus controller" under "Device Manager". Please remove the question mark and restart the system (System will auto-detect the right USB2.0 driver).

SOFTWARE APPLICATION

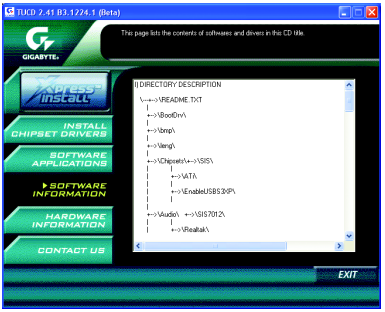
This page reveals the value-added software developed by Gigabyte and its worldwide partners.



- Gigabyte Windows Utilities Manager(GWUM)
 This utility can integrate the Gigabyte's applications in the system tray.
- Gigabyte Management Tool(GMT)
 A useful tool which can manage the computer via the network.
- EasyTune4
 Powerful utility that integrates the overclocking and hardware monitoring functions.
- DMI Viewer
 Windows based utility which is used to browse the DMI/SMBIOS information of the system.
- Face-Wizard
 New utility for adding BIOS logo.
- @BIOS
 Gigabyte windows flash BIOS utility.
- Acrobat e-Book
 Useful utility from Adobe.
- Acrobat Reader
 Popular utility from Adobe for reading .PDF file format documents.
- Norton Internet Security(NIS)
 Integrated utility which includes anti-virus, ad control, etc.
- DirectX 9.0
 Install Microsoft DirectX 9 to enable 3D hardware acceleration that support for operating system to achieve better 3D performence.

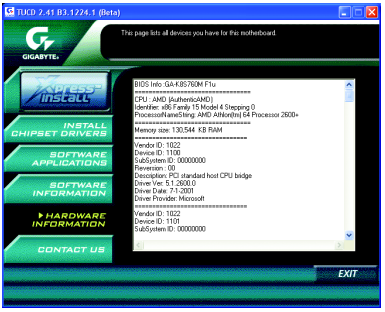
SOFTWARE INFORMATION

This page list the contects of softwares and drivers in this CD title.



HARDWARE INFORMATION

This page lists all device you have for this motherboard.



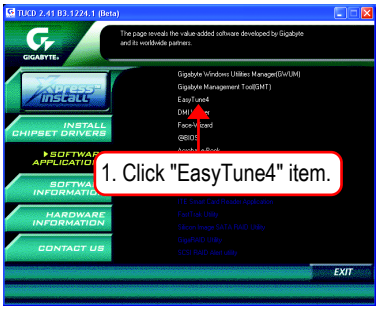
CONTACT US

Please see the last page for details.

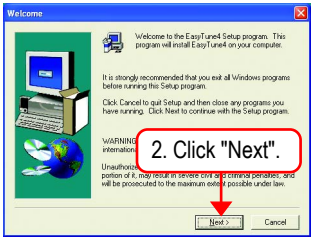


EasyTune 4 Utilities Installation

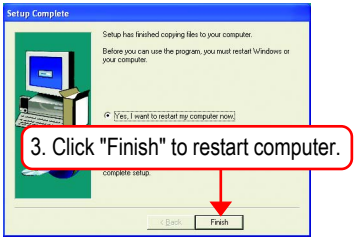
Powerful utility that integrates the overclocking and hardware monitoring functions



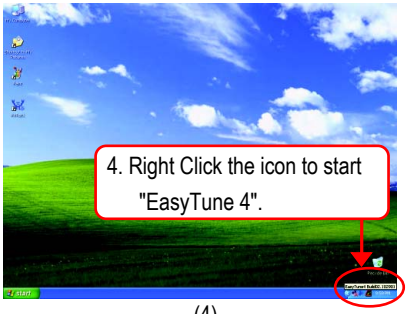
(1)



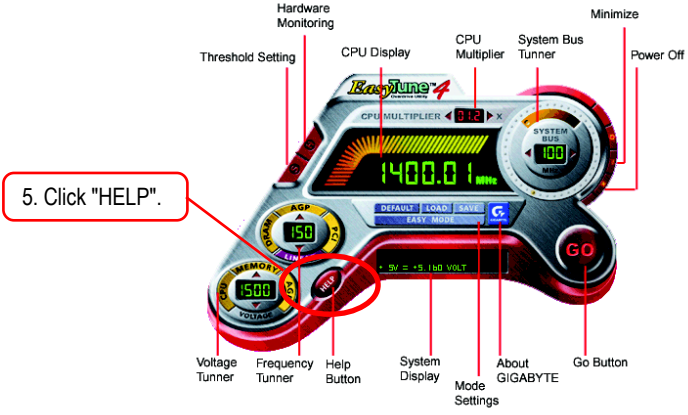
(2)



(3)



(4)



FAQ

Below is a collection of general asked questions. To check general asked questions based on a specific motherboard model, please log on to http://tw.giga-byte.com/faq/faq.htm

Question 1: I cannot see some options that were included in previous BIOS after updating BIOS. Why?
Answer: Some advanced options are hidden in new BIOS version. Please press Ctrl and F1 keys after entering BIOS menu and you will be able to see these options.

Questions 2: Why is the light of my keyboard/optical mouse still on after computer shuts down?
Answer: In some boards, a small amount of electricity is kept on standby after computer shuts down and that's why the light is still on.

Question 3: Why cannot I use all functions in EasyTune™ 4?
Answer: The availability of the listed functions in EasyTune™ 4 depends on the MB chipset. If the chipset doesn't support certain functions in EasyTune™ 4, these functions will be locked automatically and you will not be able to use them.

Question 4: Why do I fail to install RAID and ATA drivers under Win 2000 and XP on boards that support RAID function after I connect the boot HDD to IDE3 or IDE4 ?
Answer: First of all, you need to save some files in the CD-ROM to a floppy disk before installing drivers. You also need to go through some rather different steps in the installation process. Therefore, we suggest that you refer to the installation steps in the RAID manual at our website.
(Please download it at http://tw.giga-byte.com/support/user_pdf/raid_manual.pdf)

Question 5: How do I clear CMOS?
Answer: If your board has a Clear CMOS jumper, please refer to the Clear CMOS steps in the manual. If your board doesn't have such jumper, you can take off the on-board battery to leak voltage to clear CMOS. Please refer to the steps below:

Steps:

1. Turn off power.
2. Disconnect the power cord from MB.
3. Take out the battery gently and put it aside for about 10 minutes (Or you can use a metal object to connect the positive and negative pins in the battery holder to make them short for one minute).
4. Re-insert the battery to the battery holder.
5. Connect power cord to MB again and turn on power.
6. Press Del to enter BIOS and load Fail-Safe Defaults.
7. Save changes and reboot the system.

Question 6: Why does system seem unstable after updating BIOS?
Answer: Please remember to load Fail-Safe Defaults (Or Load BIOS Defaults) after flashing BIOS. However, if the system instability still remains, please clear CMOS to solve the problem.

Question 7: Why do I still get a weak sound after turning up the speaker to the maximum volume?
Answer: Please make sure the speaker you are using is equipped with an internal amplifier. If not, please change another speaker with power/amplifier and try again later.

Question 8: How do I disable onboard VGA card in order to add an external VGA card?
Answer: Gigabyte motherboards will auto-detect the external VGA card after it is plugged in, so you don't need to change any setting manually to disable the onboard VGA.

Question 9: Why cannot I use the IDE 2?
Answer: Please refer to the user manual and check whether you have connected any cable that is not provided with the motherboard package to the USB Over Current pin in the Front USB Panel. If the cable is your own cable, please remove it from this pin and do not connect any of your own cables to it.

Question 10: Sometimes I hear different continuous beeps from computer after system boots up. What do these beeps usually stand for?
Answer: The beep codes below may help you identify the possible computer problems. However, they are only for reference purposes. The situations might differ from case to case.

→AMI BIOS Beep Codes

*Computer gives 1 short beep when system boots successfully.
*Except for beep code 8, these codes are always fatal.

1 beep Refresh failure
2 beeps Parity error
3 beeps Base 64K memory failure
4 beeps Timer not operational
5 beeps Processor error
6 beeps 8042 - gate A20 failure
7 beeps Processor exception interrupt error
8 beeps Display memory read/write failure
9 beeps ROM checksum error
10 beeps CMOS shutdown register read/write error
11 beeps Cache memory bad

→ AWARD BIOS Beep Codes

1 short: System boots successfully
2 short: CMOS setting error
1 long 1 short: DRAM or M/B error
1 long 2 short: Monitor or display card error
1 long 3 short: Keyboard error
1 long 9 short: BIOS ROM error
Continuous long beeps: DRAM error
Continuous short beeps: Power error

Question 11: How to set in the BIOS in order to bootup from SATA HDDs by either RAID or ATA mode?

Answer: Please set in the BIOS as follow:

1. Advanced BIOS features--> SATA/RAID/SCSI boot order: "SATA"
2. Advanced BIOS features--> First boot device: "SCSI"
3. Integrated Peripherals--> Onboard H/W Serial ATA: "enable"

Then it depends on the SATA mode that you need to set "RAID" to RAID mode or "BASE" to normal ATA mode in the item named Serial ATA function.

Question 12: For the M/B which have RAID function, how to set in the BIOS in order to bootup from IDE3, 4 by either RAID or ATA mode?

Answer: Please set in the BIOS as follow:

1. Advanced BIOS features-->(SATA)/RAID/SCSI boot order: "SATA"
2. Advanced BIOS features--> First boot device: "SCSI"
3. Integrated Peripherals--> Onboard H/W ATA/RAID: "enable"

Then it depends on the RAID mode that you need to set "RAID" to RAID mode or "ATA" to normal ATA mode in the item named RAID controller function.

Question 13: How to set in the BIOS to bootup from the IDE/ SCSI/ RAID card ?

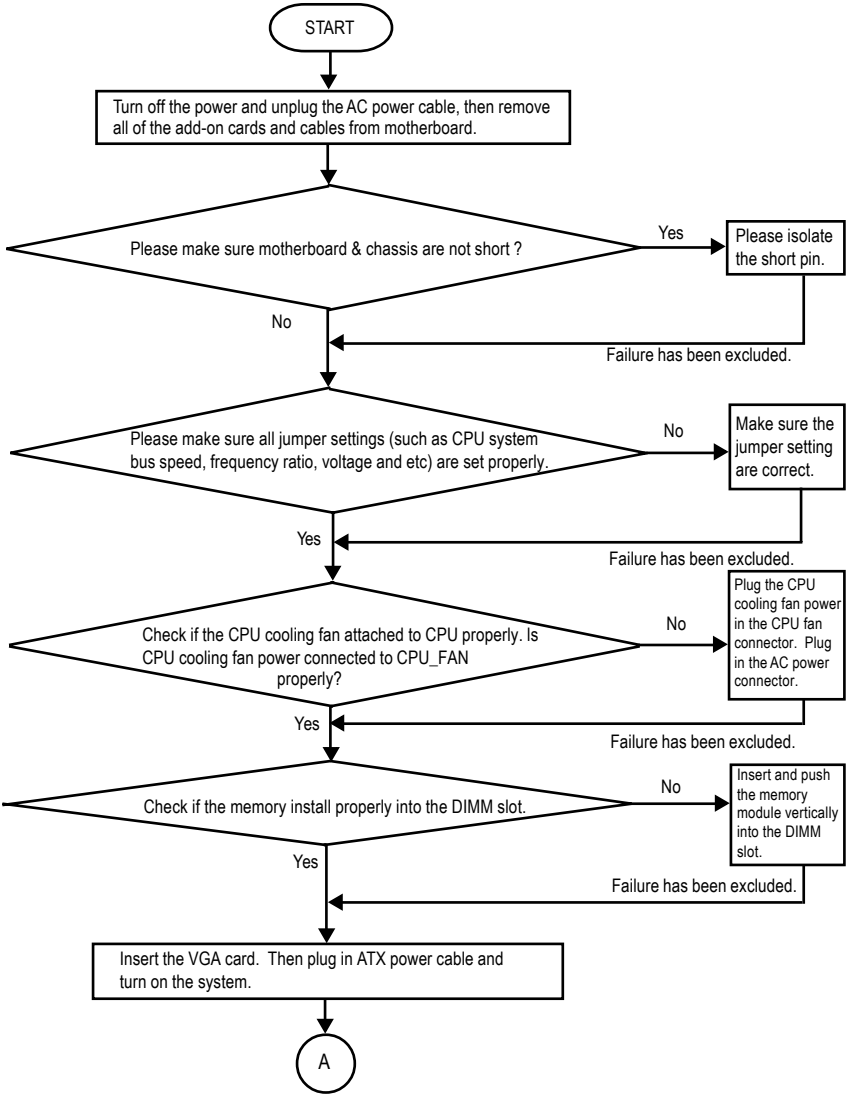
Answer: Please set in the BIOS as follow:

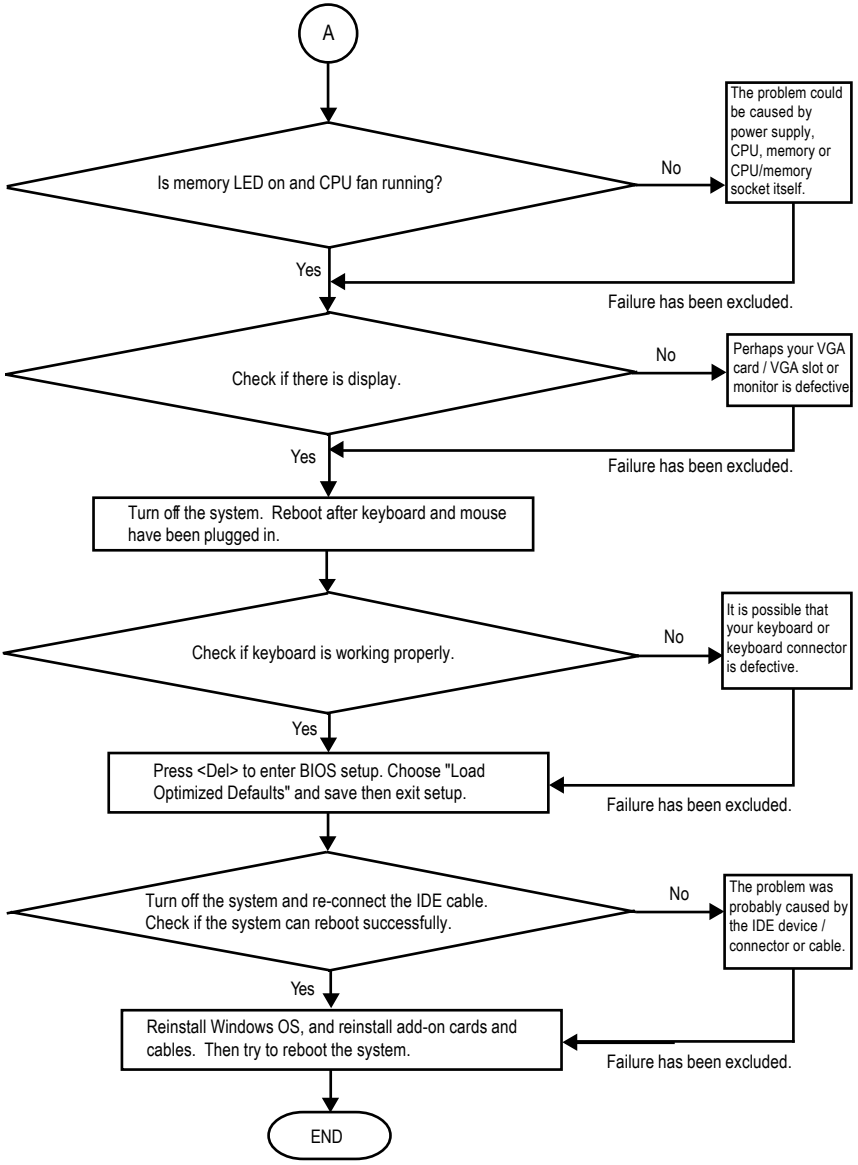
1. Advanced BIOS features-->(SATA)/RAID/SCSI boot order: "SCSI"
2. Advanced BIOS features--> First boot device: "SCSI"

Then it depends on the mode(RAID or ATA) that you need to set in RAID/ SCSI BIOS.

Troubleshooting

If you encounter any trouble during boot up, please follow the troubleshooting procedures.





If the above procedure unable to solve your problem, please contact with your local retailer or national distributor for help. Or, you could submit your question to the service mail via Gigabyte website technical support zone (http://www.gigabyte.com.tw). The appropriate response will be provided ASAP.

Technical Support/RMA Sheet

Customer/Country:	Company:	Phone No.:
Contact Person:	E-mail Add. :	

Model name/Lot Number:	PCB revision:
BIOS version:	O.S./A.S.:

Hardware Configuration	Mfs.	Model name	Size:	Driver/Utility:
CPU				
Memory Brand				
Video Card				
Audio Card				
HDD				
CD-ROM / DVD-ROM				
Modem				
Network				
AMR / CNR				
Keyboard				
Mouse				
Power supply				
Other Device				

Problem Description:

Acronyms

Acronyms	Meaning
ACPI	Advanced Configuration and Power Interface
APM	Advanced Power Management
AGP	Accelerated Graphics Port
AMR	Audio Modem Riser
ACR	Advanced Communications Riser
BIOS	Basic Input / Output System
CPU	Central Processing Unit
CMOS	Complementary Metal Oxide Semiconductor
CRIMM	Continuity RIMM
CNR	Communication and Networking Riser
DMA	Direct Memory Access
DMI	Desktop Management Interface
DIMM	Dual Inline Memory Module
DRM	Dual Retention Mechanism
DRAM	Dynamic Random Access Memory
DDR	Double Data Rate
ECP	Extended Capabilities Port
ESCD	Extended System Configuration Data
ECC	Error Checking and Correcting
EMC	Electromagnetic Compatibility
EPP	Enhanced Parallel Port
ESD	Electrostatic Discharge
FDD	Floppy Disk Device
FSB	Front Side Bus
HDD	Hard Disk Device
IDE	Integrated Dual Channel Enhanced
IRQ	Interrupt Request

to be continued.....

Acronyms	Meaning
IOAPIC	Input Output Advanced Programmable Input Controller
ISA	Industry Standard Architecture
LAN	Local Area Network
I/O	Input / Output
LBA	Logical Block Addressing
LED	Light Emitting Diode
MHz	Megahertz
MIDI	Musical Instrument Digital Interface
MTH	Memory Translator Hub
MPT	Memory Protocol Translator
NIC	Network Interface Card
OS	Operating System
OEM	Original Equipment Manufacturer
PAC	PCI A.G.P. Controller
POST	Power-On Self Test
PCI	Peripheral Component Interconnect
RIMM	Rambus in-line Memory Module
SCI	Special Circumstance Instructions
SECC	Single Edge Contact Cartridge
SRAM	Static Random Access Memory

CONTACT US

Contact us via the information in this page all over the world.

- **Taiwan**

Gigabyte Technology Co., Ltd.
Address: No.6, Bau Chiang Road, Hsin-Tien, Taipei Hsien, Taiwan, R.O.C.
Tel: 886 (2) 8912-4888
Fax: 886 (2) 8912-4004
Tech. Support:
http://tw.giga-byte.com/TechSupport/ServiceCenter.htm
Non-Tech. Support (Sales/Marketing issues):
http://ggts.gigabyte.com.tw/nontech.asp
Website: http://www.gigabyte.com.tw

- **USA**

G.B.T. INC.
Address: 17358 Railroad St, City of Industry, CA 91748.
Tel: 1 (626) 854-9338
Fax: 1 (626) 854-9339
Tech. Support:
http://www.giga-byte.com/TechSupport/ServiceCenter.htm
Non-Tech. Support (Sales/Marketing issues):
http://ggts.gigabyte.com.tw/nontech.asp
Website: http://www.giga-byte.com

- **Germany**

G.B.T. Technology Trading GmbH
Tel: 49-40-2533040
49-01803-428468 (Tech.)
Fax: 49-40-25492343 (Sales)
49-01803-428329 (Tech.)
Tech. Support:
http://de.giga-byte.com/TechSupport/ServiceCenter.htm
Non-Tech. Support (Sales/Marketing issues):
http://ggts.gigabyte.com.tw/nontech.asp
Website: http://www.gigabyte.de

- **Japan**

Nippon Giga-Byte Corporation
Website: http://www.gigabyte.co.jp

- **U.K**

G.B.T. TECH. CO. LTD.
Tel: 44-1908-362700
Fax: 44-1908-362709
Tech. Support:
http://uk.giga-byte.com/TechSupport/ServiceCenter.htm
Non-Tech. Support (Sales/Marketing issues):
http://ggts.gigabyte.com.tw/nontech.asp
Website: http://uk.giga-byte.com

- **The Netherlands**

Giga-Byte Technology B.V.
Address: Verdunplein 8 5627 SZ, Eindhoven, The Netherlands
Tel: +31 40 290 2088
NL Tech.Support : 0900-GIGABYTE (0900-44422983, € 0.2/M)
BE Tech.Support : 0900-84034 (€ 0.4/M)
Fax: +31 40 290 2089
Tech. Support:
http://nz.giga-byte.com/TechSupport/ServiceCenter.htm
Non-Tech. Support (Sales/Marketing issues):
http://ggts.gigabyte.com.tw/nontech.asp
Website: http://www.giga-byte.nl

- **China**

NINGBO G.B.T. Tech. Trading CO., Ltd.
Tech. Support:
http://cn.giga-byte.com/TechSupport/ServiceCenter.htm
Non-Tech. Support (Sales/Marketing issues):
http://ggts.gigabyte.com.tw/nontech.asp
Website: http://www.gigabyte.com.cn

Beijing
Tel: 86-10-82856054, 86-10-82856064, 86-10-82856094
Fax: 86-10-82856575

Chengdu
Tel: 86-28-85236930
Fax: 86-28-85256822

GuangZhou
Tel: 86-20-87586273
Fax: 86-20-87544306

Shanghai
Tel: 86-21-64737410
Fax: 86-21-64453227

Shenyang
Tel: 86-24-23960918, 86-24-23960893

Wuhan
Tel: 86-27-87854385, 86-27-87854802
Fax: 86-27-87854031

Xian
Tel: 86-29-5531943
Fax: 86-29-5539821